

THE IMPROVED RELATION BETWEEN THE SCIENTIFIC DOCTRINE...

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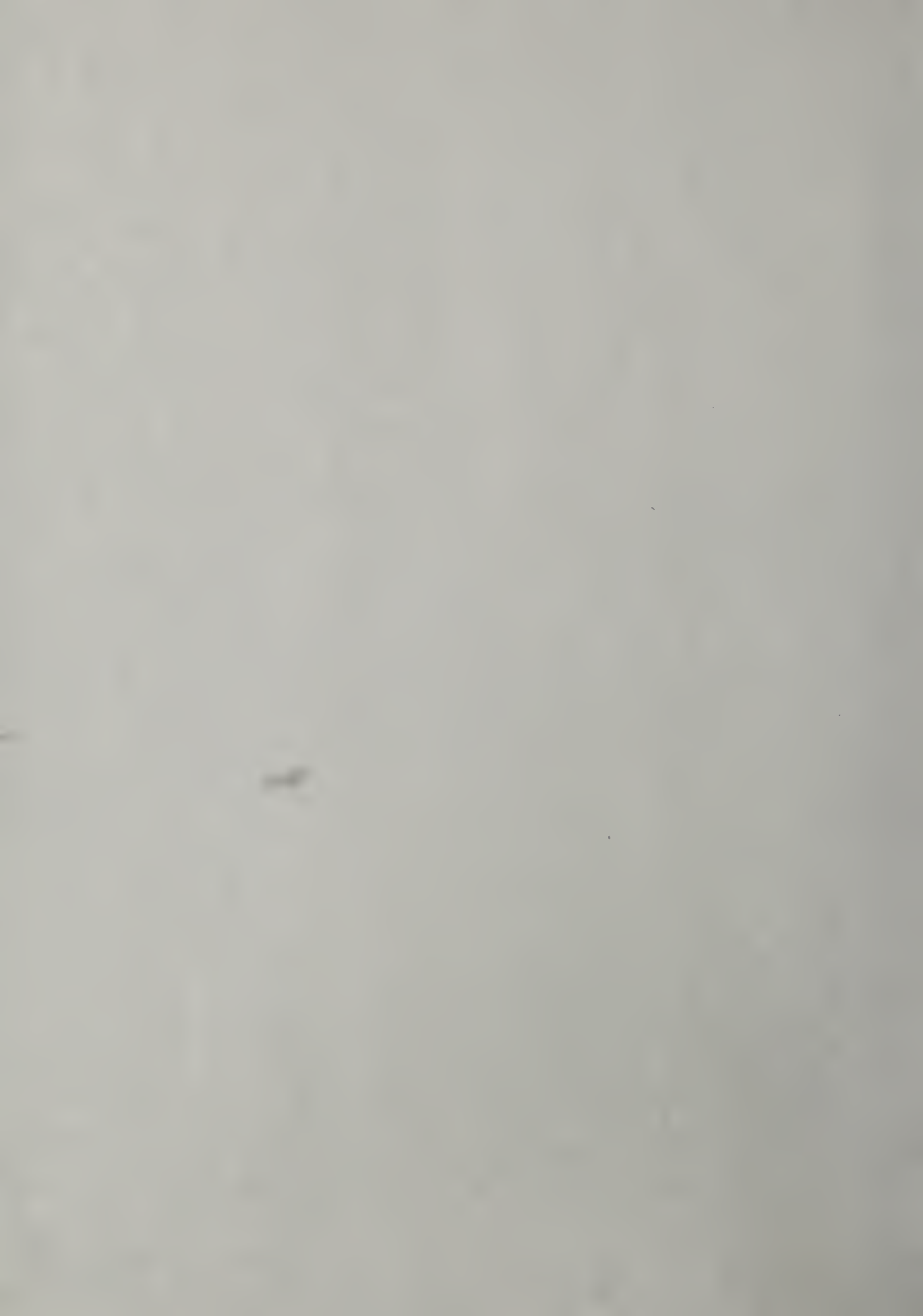


The Improved Relation Between the Scientific  
Doctrine of Evolution and Theology in the Last Fifty  
Years.

R. J. Elliott,

March, 1912.

Manchester, N.H.





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The Improved Relation Between the Scientific  
Doctrine of Evolution and Theology in the Last  
Fifty Years.

By

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(PhB. Iowa 1905; S. T. B. Boston University, 1907;

A. M. Boston University, 1909.)

A Dissertation

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for the degree of Doctor of Philosophy

Graduate School

Boston University

1912.

Approved.  
Mrs. M. Warren.

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John E. Clarke.



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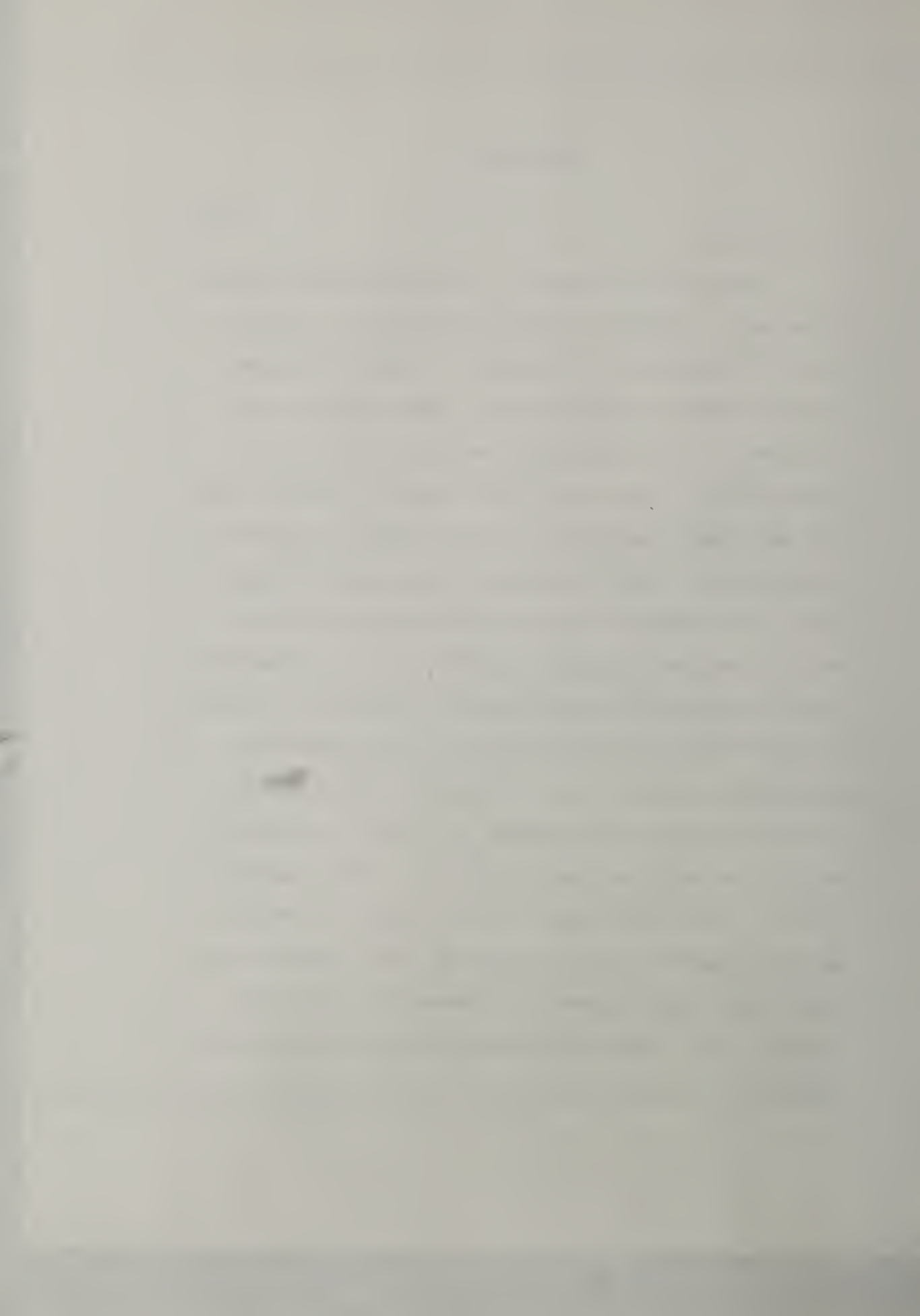




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## INTRODUCTION.

The thesis which I purpose to maintain in these pages is, that the relation between Natural Science and Theology has improved in the last fifty years.

A definition of terms may help to make clear just what is meant here by the terms natural science and theology, and by the assertion that the relation between natural science and theology has improved. Clearly defined discrimination between theology and religion on the one hand and between scientific theories and authenticated scientific facts on the other, might have warded off much of the confusion and unrest caused by the warfare known as the 'conflict between science and religion.' The fact that the field of philosophy was not more clearly defined than the fields of science and religion may have been the cause of much of the confusion.

As we attempt to define natural science it becomes evident that the term is relative, that the content of the term cannot, in the nature of things, be fixed and permanent.

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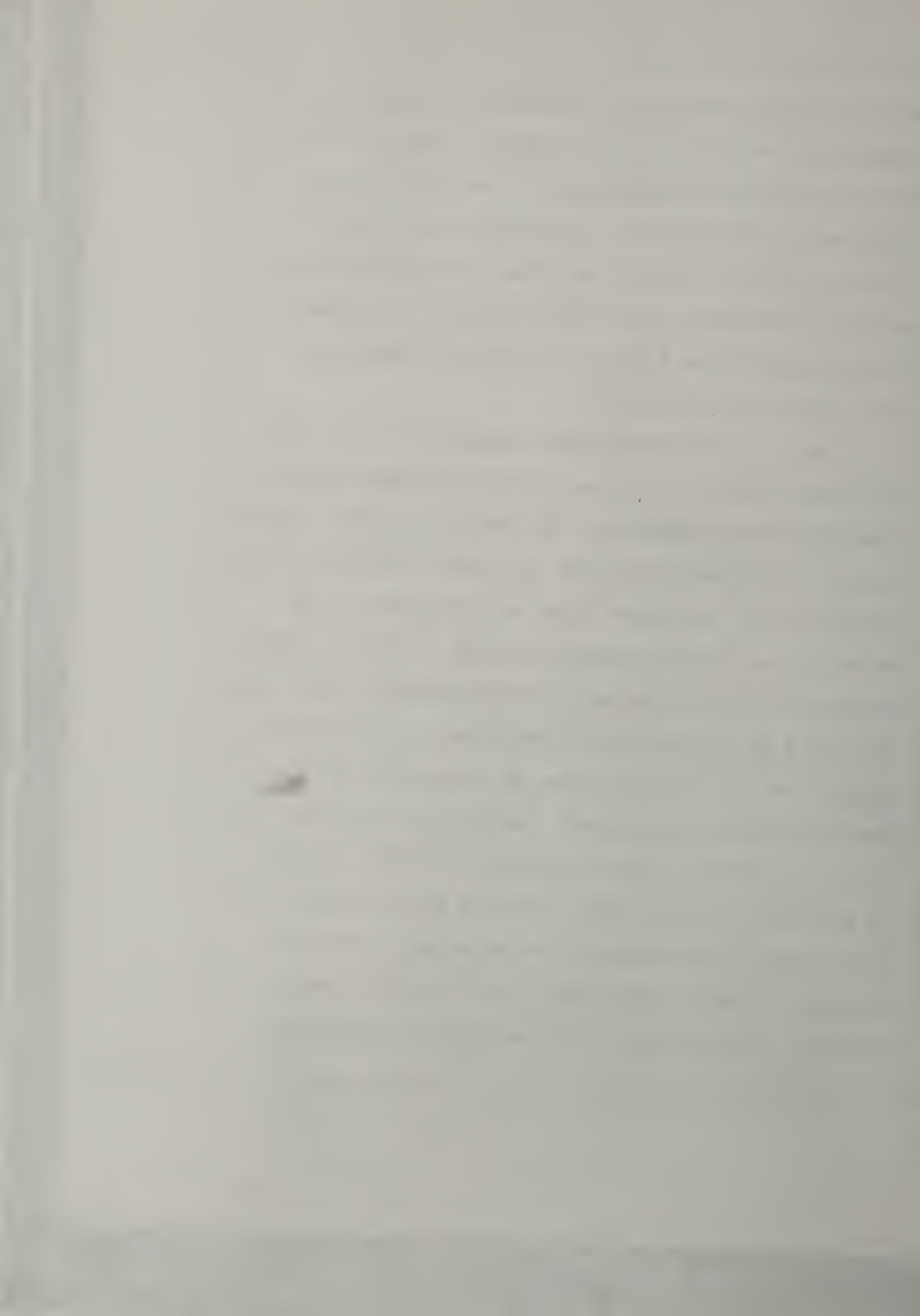


objective reality, apart from and over against the observing mind, is what it is. The world of facts is there, whether we know the facts or not. Whether the objective world is ontological reality, or phenomenal reality, it is real for thought, in that it is not a hallucination or an illusion. Man is seeking to know this world of phenomena, and gets the facts in experience. As we are limited in knowledge and capability we have not all the facts, but are getting more and more as our experiences enlarges; hence it is readily seen that our conception of the facts of the world of phenomena to-day, may have to be modified to-morrow, when to-morrow's experience and knowledge are added to the experience of to-day. The systematized and classified conceptions relating to the physical world and its phenomena, which some dogmatists call positive knowledge rather than conceptions, are called natural science. The accepted natural science of fifty years ago does not absolutely coincide or harmonize with the accepted natural science of to-day; for enlarged experience has given new data, and changed our conceptions regarding the facts of the world of reality. So long as



all the facts relative to the physical world and its phenomena are not in, it is evident that our Natural Science must be relative; and it may also be seen that Natural Science of to-day may be in greater or lesser conflict with the accepted systematized conceptions relating to any other field of experience, as for example: the field of religious experience or of theological thought.

Just as our conceptions relating to the physical world and its phenomena undergo changes by new experiences and knowledge, so our conceptions regarding the spiritual realm and religious phenomena undergo changes by new experiences and knowledge. The facts of the physical world are what they are, independent of our knowledge or conceptions of them; and the facts of the spiritual realm are what they are, independent of our knowledge or conception of them. The truths of the spiritual realm are as eternal as the truths of the physical realm; so that religion in the sense of spiritual truth is as fixed and abiding as God, yet theology, our accepted scientific conceptions as to what that truth is, may change, and must change with an enlargement of experience



and a greater knowledge of the facts as they really are. Hence it may be seen that our theology as well as our natural science is relative, and must be until we know the facts as they are, and this knowledge cannot be hoped for here because we are finite beings. It may also be seen that it is not surprising that theology has changed, and that there was by times an apparent conflict between natural science and theology.

The apparent conflict was due to ignorance of the real facts which abide although our conceptions of them change. Apparent discrepancies vanish as knowledge increases.

When we speak of the relation between natural science and theology, we mean by the term 'relation,' compatibility or consistency. We are thinking of the compatibility of the doctrines of natural science and the doctrines of theology as explanations of physical phenomena, or as explanations of how things came to be as they are and how they continue. It may be asked, does natural science deny what theology affirms; or, if one is true, is the other logically false? Does natural science necessitate a new con-





ception of the way purpose is realized, or does it deny purpose altogether, in contradiction of the tenets of theology?

When we say that the relation between natural science and theology has improved, we mean that both have come to a better understanding of the truth, and each, being disentangled from the fetters of preconceived and unauthenticated notions, now more nearly describes the fact or represents truth as it is, and hence the two must be more conformable, for truth is truth whether revealed in nature or in Scripture.

The creative all sufficient intelligent personality behind all is not divided against Himself. As we gain in experience we come more and more to feel that this power is not dualistic, one element combating the other, but that, knowing the perfect whole, life is harmony to Him who spoke into existence the facts or truths of both the physical and the spiritual realm.

When we know all the facts, every phase or department of knowledge will be found to be in harmony with every other. The relation between natural



science and theology has improved, for since we have come to a better knowledge of the facts the apparent inconsistencies over which there were so much needless confusion and conflict have largely vanished, and natural science and theology unite in serving to enrich the life of man that he may be better able to glorify his Creator and God.

An investigation of the views of some of the leading naturalists and theologians, as expressed in the last half century, may lead to the conclusion that my thesis is correct, or that the claim, that the relation between natural science and theology has improved in the last fifty years, is sustained.

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## CHAPTER I.

The Status of Natural Science and Theology  
about the Middle of the Last Century.

The history of the middle decades of the last century gives evidence that as a result of scientific investigation, orthodox theology was brought under strong suspicion, in the minds of a few able and sincere thinkers and investigators.

It usually requires some time for any new theory or development in the scientific or theological world to effect noticeably the thought and attitude of the rank and file of mankind. So it was in this period. The fuse was being made but the explosion was not yet heard nor its effects felt by those at a distance from the scene of operation.

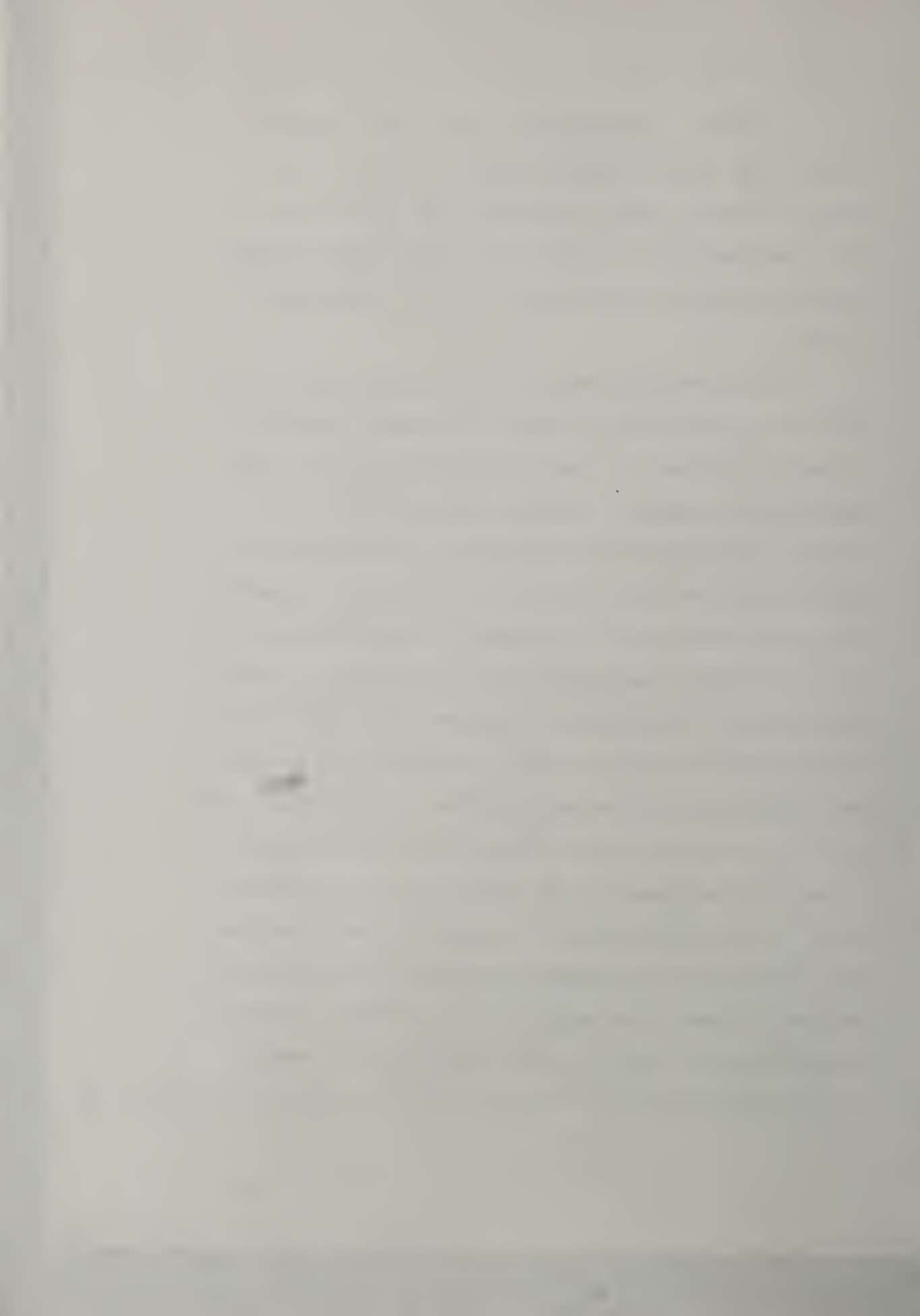
In order to give a general conception of the conditions of this period, the conclusions of a few of these investigators may suffice. Some worked in





the field of Natural Science, some in the field of Theology and others in Philosophy. It is not our purpose to weigh their arguments, but only to set forth the conditions, showing the fact that orthodox theology was being questioned by a few independent thinkers.

Charles Babbage says, "In truth the mass of evidence which combines to prove the great antiquity of the earth itself, is so irresistible, and so unshaken by any opposing facts, that none but those who are alike incapable of observing the facts and appreciating the reasoning can for a moment conceive the present state of its surface to have been the result of only six thousand years of existence. Those observers and philosophers who have spent their lives in the study of geology, have arrived at the conclusion, that there exists irresistible evidence that the date of the earth's first formation is far anterior to the epoch supposed to be assigned to it by Moses; and it is now admitted by all competent persons that the formation even of those strata which are nearest the surface must have occupied vast periods, probably millions of years in arriving at their present



state."<sup>1</sup>

Charles Maclean in a contribution to geology, estimates a single period of volcanic quiescence, during which strata of coal, shale, sandstone, and limestone were deposited over the site of the basaltic hills called Arthur's Seat, at Edinburg, at five hundred thousand years.<sup>2</sup>

The "Athenaeum", Sept. 26, 1846, p. 992, has an account of a discourse given by Mr. Lyell, upon the Delta of the Mississippi, a narrow promontory projecting into the Gulf of Mexico. This is known to have been and still to be increasing and advancing, from the constant action of the river in bearing down mud and other matter of deposit. Observation, and comparison, made during more than one hundred years, had directed attention to the progress of deposit, and the consequent gain of land advancing into the sea. But never before had the requisite talents, the result of science and experience, been employed for the resolution of the question. Lyell

<sup>1</sup>  
The Ninth Bridgewater Treatise, pp. 67, 68. 1837.

<sup>2</sup>  
Geology of Fife and the Lothians, P. 37. Edinb. 1839.



had the concurrent investigation, and assent to his conclusions, of several American men of science.

The conclusion of the whole is, that the alluvial plain from which the portion of land projects, with that portion itself, after making great deductions to satisfy the most excessive caution, has required more than one hundred thousand years for the development of its present condition.

The words with which Lyell concludes are intensely interesting and indicate that there was no lack of reverence on his part, for the Creator of the world spoken of in the book of Genesis, nor any desire to discredit the orthodox interpretations of Scripture, but only a desire to know the truth. He says, "The further we extend our researches into the wonders of creation, in time and space, the more do we exalt, refine, and elevate our conceptions of the Divine artificer of the universe."

David F. Strauss one of the great scholars of the last century created an epoch in historical theology by the publication of his "Leben Jesu", Vol. I in 1834 and Vol. II in 1835.

He claimed that there was need of a new mode





of considering the life of Jesus, in the place of the antiquated systems of supernaturalism and naturalism. He says, "The new point of view, which must take the place of the old is the mystical. It is not by any means meant that the whole history of Jesus is to be represented as mystical, but only that every part of it is to be subjected to a critical examination, to ascertain whether it have not some admixture of the mythical. Investigations of this kind may inflict a wound on the faith of individuals."<sup>1</sup>

This is the very thing it did; and it will be seen that some of his declarations are in direct contradiction to the orthodox views regarding Jesus.

He claims that the canonical Gospels disagree in relation to the forms of the annunciation of the birth of Jesus to Mary by the angel. After stating his case he says, "Where the discrepancies are so great and so essential, it may at first sight appear altogether superfluous to inquire whether the two evangelists record one and the same occurrence."<sup>2</sup>

He discredits the supernatural conception of Jesus. He says, "Just as little as in the Gospels, is anything in confirmation of the view of the su-

<sup>1</sup> Leben Jesu--First German edition. P. 1 and 2 of preface. Translated by George Eliot.

<sup>2</sup> Leben Jesu--Vol. I pp. 107--112 First German Edition 1834.



pernatural conception of Jesus to be found in the  
 remaining New Testament writings."<sup>3</sup>

He discredits miracles and the resurrection of the dead. He says, "We nevertheless distinctly declare that we regard the history of the resurrection of Lazarus, not only as in the highest degree improbable in itself, but also destitute of external evidence; and the chapters examined as an indication of the unauthenticity of the fourth Gospel."<sup>4</sup>

Numerous other illustrations might be cited but already we have enough to show that he was an independent investigator, intense, critical and fearless, unbounded by any sentimental reverence for the traditional theological views.

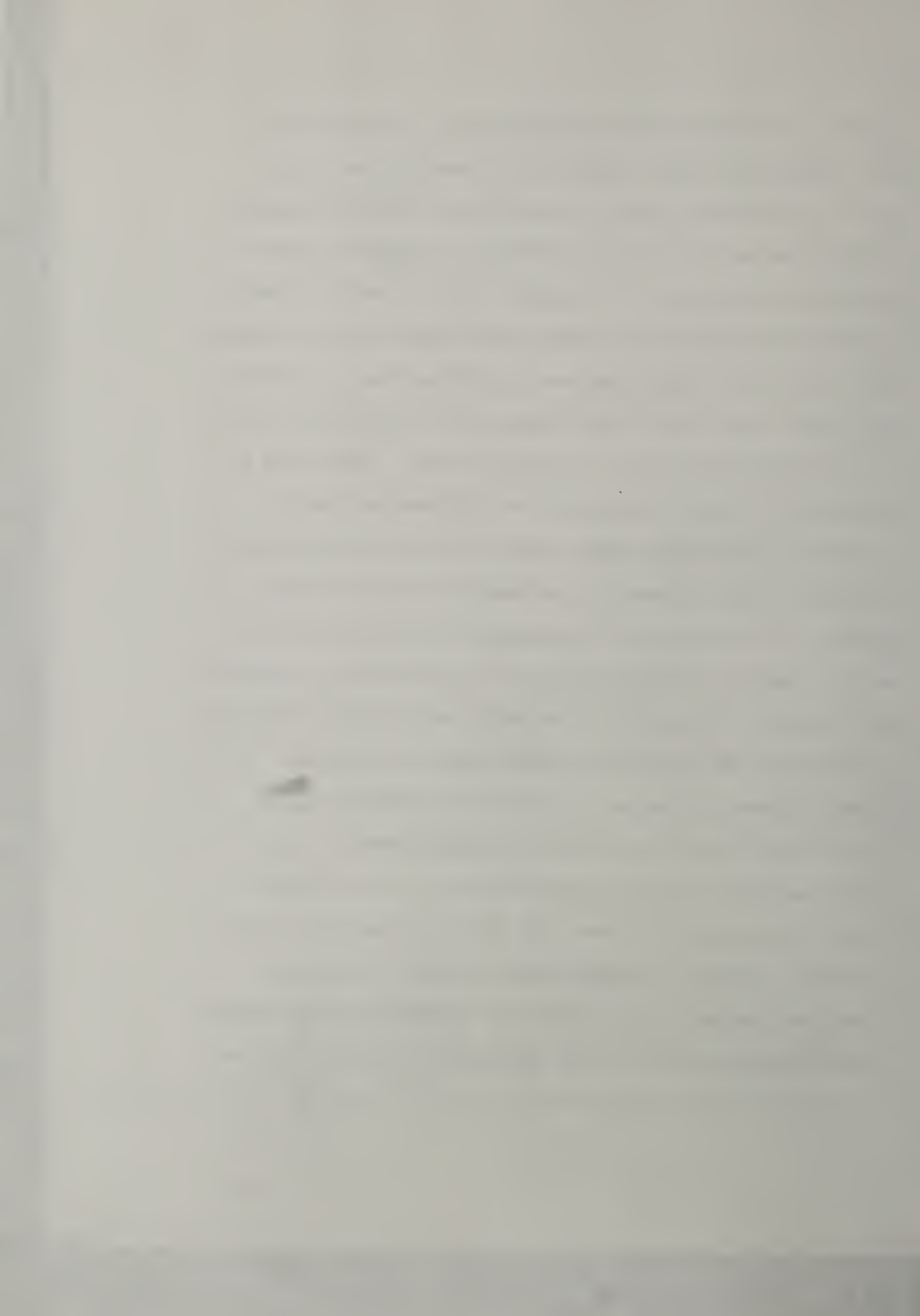
Lecky by the publication of the "History of the Rise and Spirit of Rationalism in Europe" disturbed the peace of the theological world and gave zest to the spirit of independent and critical research. He says, "Human reason is the only factor in history. The agency of the Holy Spirit is ignored. Elaborate creeds and liturgical services are a barrier to the world's progress, because they shackle the intellect by impure traditions. The

<sup>3</sup> Leben Jesu Vol. I P. 121 First German Edition 1834

<sup>4</sup> Leben Jesu Vol. I P. 551. First German Edition 1834.



central conception of rationalism is the elevation of conscience into a position of supreme authority as the religious organ, a verifying faculty discriminating between truth and error. It regards Christianity as designed to preside over the moral development of mankind as a conception which was to become more and more sublimated and spiritualized as the human mind passed into new phases, and was able to bear the splendor of a more unclouded light. Religion it believes to be no exception to the general law of progress, but rather the highest form of its manifestations, and its earlier systems but the necessary steps of an imperfect development. In its eyes the moral element of Christianity is as the sun in heaven, and dogmatic systems are as the clouds that intercept and temper the exceeding brightness of its rays. The insect whose existence is but for a moment, might well imagine that these were indeed eternal, that their majestic columns could never fail, and that their luminous folds were the very source and centre of light. And yet they shift and vary with each changing breeze; they blend and separate; they assume new forms and exhibit new dimensions; as the sun that





is above them waxes more glorious in its power, they are permeated and at last absorbed by its increasing splendor; they recede, and wither, and disappear, and the eye ranges far beyond the sphere they had occupied, into the infinity of glory that is before them. Rationalism would unite in one sublime synthesis all the past forms of human belief which accepts with triumphant alacrity each new development of science, having no stereotyped standard to defend, and which represents the human mind as pursuing on the highest subjects, a path of continual progress toward the fullest and most transcendent knowledge of the Deity. It clusters around a series of essentially christian conceptions,--equality, fraternity, the suppression of war, the elevation of the poor, the love of truth, and the diffusion of liberty. It revolves around the ideal of Christianity, and represents its spirit without its dogmatic system and its supernatural narratives. From both of these it unhesitatingly recoils, while deriving all its strength and nourishment from christian ethics. There is no such thing as a fixed notion of God and Providence. The conceptions of man on these subjects

the first of the two main branches of the  
river, the one which flows into the  
sea, is the main branch, and the other  
is a tributary.

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will change with the progress of the race. Human reason, therefore and not revelation, is the sole arbiter of truth."<sup>1</sup>

It is evident that Mr. Lecky here ignores the agency of the Holy Spirit, either in giving inspired truth to the world, or in educating the church. Reason is placed above Revelation, and the dictates of reason are made to decide the quality of revealed truth.

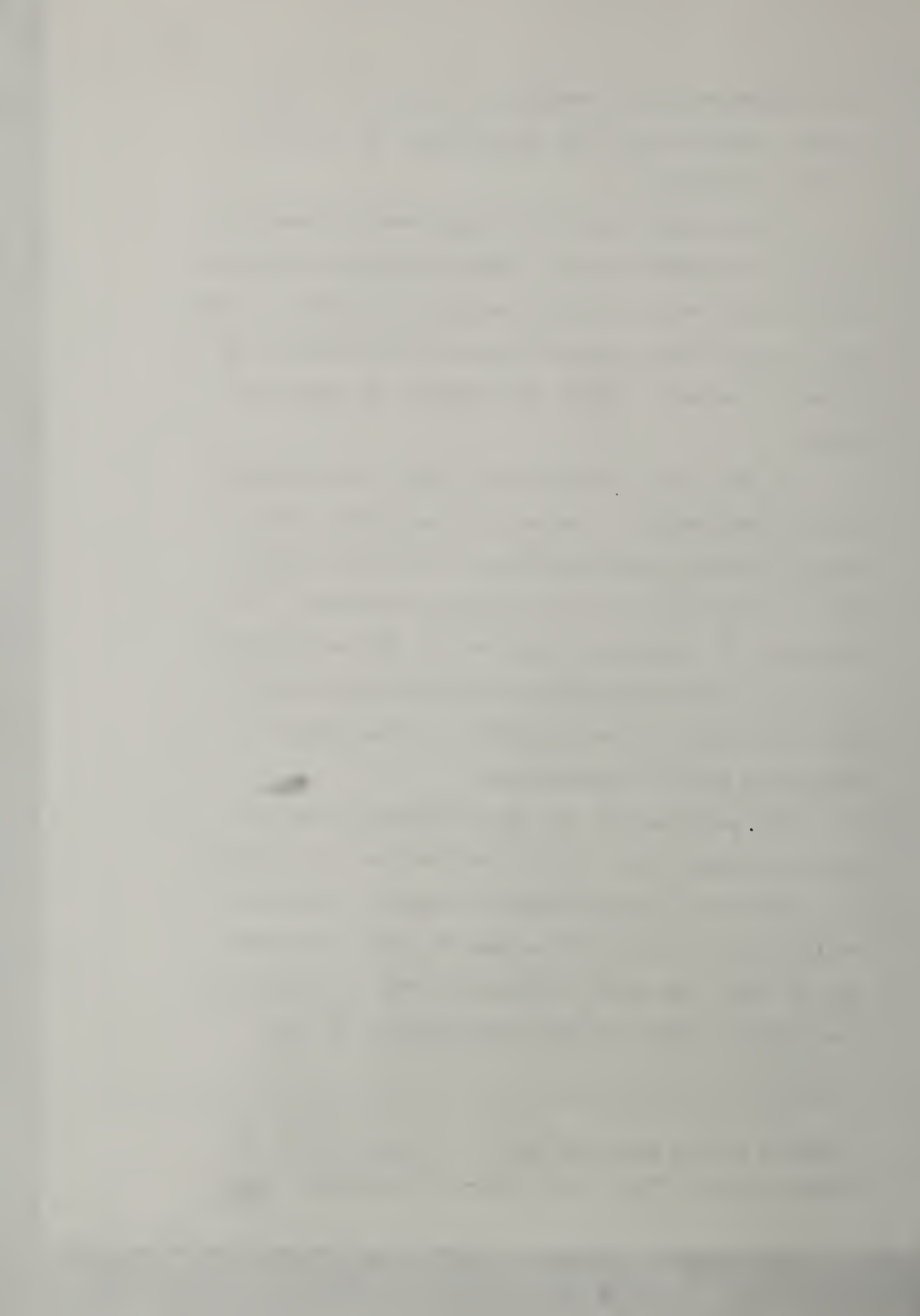
In the application of this view to literature, if in a book which in the main is accepted, a mysterious account should be found, the mystery would have to be thrown out as altogether unlikely. If a miracle is recounted, even one of the best attested of all, the Rationalists of whom Lecky is only one, would say, "It could never have happened for Nature has made it impossible."

The publication of the conclusions reached by the thinkers here cited could not fail to arouse the champions of the orthodox views and spur them to look well to the foundations of the faith that was in them, and would ultimately tend to undermine the faith of many, in the infallibility of the

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History of the Rise and Spirit of Rationalism in Europe. Lecky. Vol. I. pp. 183--185. Longmans London 1865.



Scriptures and in orthodox theology. Yet it is evident that the masses of the people were loyal to the dogmas of the christian church, and never dreamed that they were in any degree erroneous. The book of Genesis was quite universally held to be an account, not only divinely comprehensive, but miraculously exact, of the creation: and the beginnings of life on the earth; an account to which all discoveries in every branch of science must under penalties be made to conform. A favorite subject of theological eloquence was the perfection of the Pentateuch, and especially of Genesis, not only as a record of the past, but as a revelation of the future. Pfeiffer, a bishop in northern Germany, is represented as declaring that, "the text of Genesis must be received strictly", that, "it contains all knowledge, human and divine", that, "twenty-eight articles of the Augsburg Confession are to be found in it"; that, "it is an arsenal of arguments against all sects and sorts of atheists and pagans; the source of all science and arts, including law, medicine, philosophy and rhetoric; the source and essence of all histories and of all professions, trades and works; an





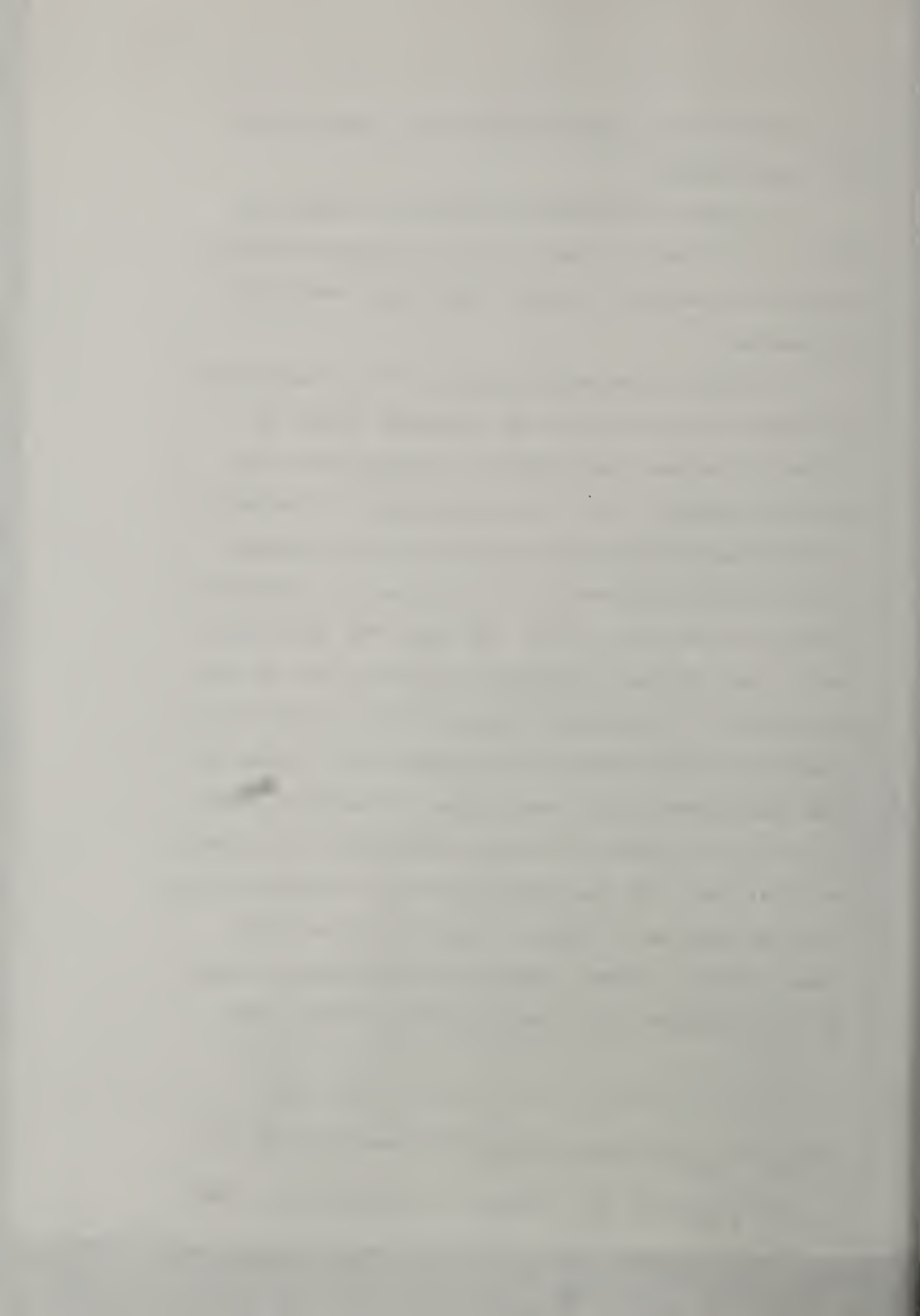
exhibition of all virtues and vices; the origin of  
all consolation."<sup>1</sup>

The same sentiment was echoed in France by Huet, who is said to have cited one hundred authors, sacred and profane, to prove that Moses wrote the Pentateuch.<sup>2</sup>

Another evidence in support of the claim that the masses were loyal to the orthodox views, in spite of the fact that opinions incompatible with orthodox theology were being expressed, is Guizot's declaration of principles, presented at a session of the special conference of Lutheran and Reformed churches in Paris in 1864. He says, "We have full faith, 1st. In the supernatural power of God in the government of the world, and especially in the establishment of the Christian religion; 2nd. In the divine and supernatural inspiration of the Holy Books, as well as in their sovereign authority in religious matters; 3rd. In the eternal divinity and miraculous birth as well as in the resurrection of our Lord Jesus Christ, God-man, Saviour, and Redeemer of men. We are convinced that these articles of the chris-

<sup>1</sup>  
Zoeckler's Theologie und Naturwissenschaft Vol. I. pp. 688, 689

<sup>2</sup> Meditations on the Essence of Christianity. Preface Pp. 6-10.



tian religion are also those of the Reformed church, which has plainly acknowledged them." In support of his proposition he said, "Gentlemen, I call your attention to one important fact. Look around you! The attacks against the bases of Christianity are seen everywhere, in Germany, Switzerland, Holland, England, and France. I fear nothing, provided aggression meets with resistance. I have entire confidence in the cause of Christianity. But man is God's workman; it is by our faith and labor that the christian religion must be defended. Gentlemen, we are the vanguard of all Christianity; we have behind us all the christian communions. Let us show ourselves equal to this great task, and firmly resolve to accomplish it." <sup>1</sup> The declaration was adopted by a vote of one hundred and forty-one against twenty-three.

At a session of the General Conference including all denominations of Protestants in France, which met in Paris in 1863 the following protest was carried by an overwhelming majority: "The Conference, considering that the faithful may be troubled by systems of the present day, attacking the very

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<sup>1</sup> Meditations on the Essence of Christianity, Guizot, Preface p. 10

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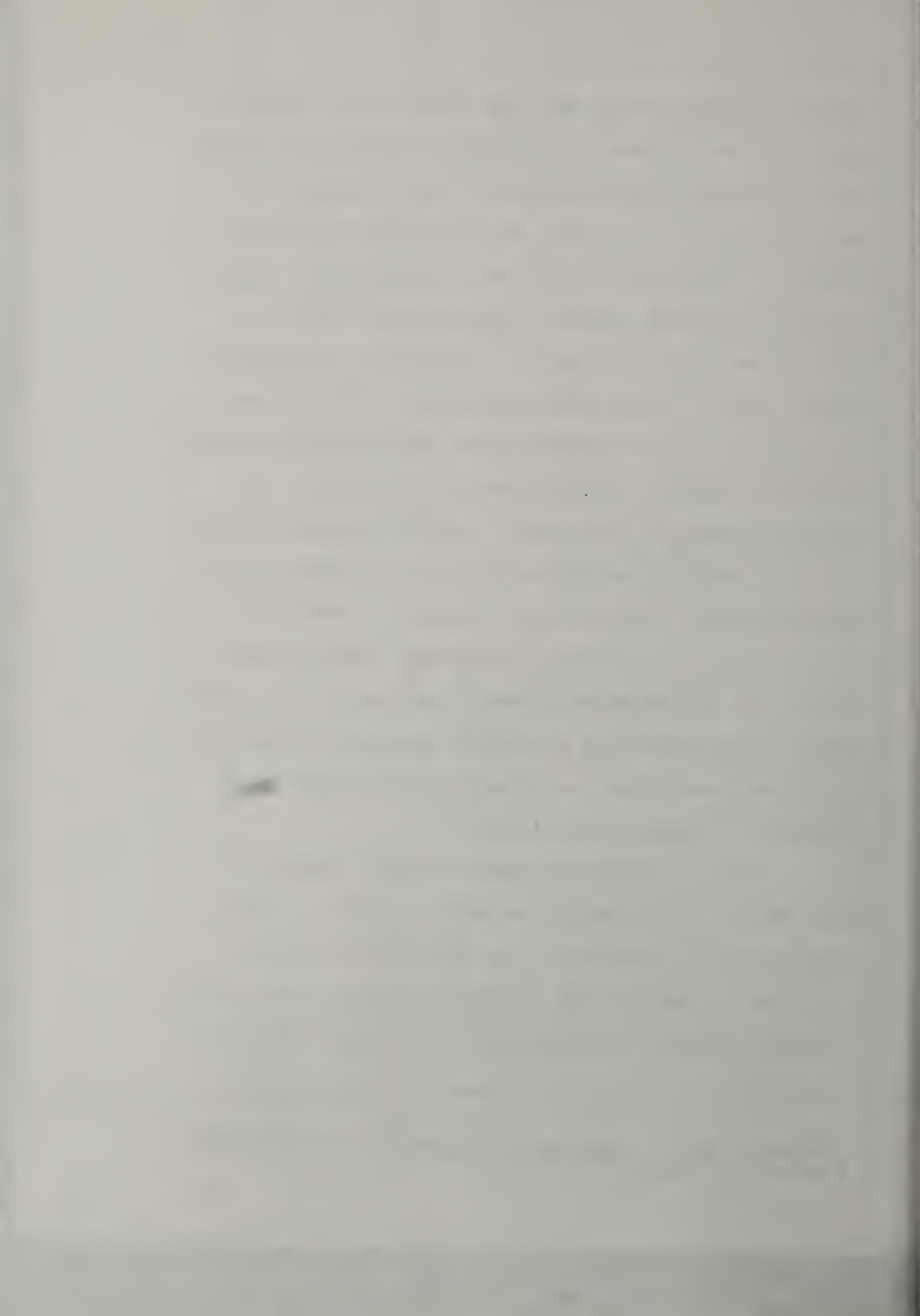
basis of Christianity and the church; that these negations are produced in the name of science, and given as the definitive results of the elaboration of modern thought,--protests in the name of christian faith, of christian conscience, of christian experience, of christian science, against every doctrine which tends to overthrow the existence of supernatural order, of the divine authority of Scripture, of the divinity of Jesus Christ, and all that touches the very essence of Christianity; such as it has been professed at all times, by all churches, marked with the seal of religious power and faithfulness. The Conference invites the faithful to beware of these systems of science, a thousand times contradicted by the incessant transformations of the human mind; and exhorts the different churches to make efforts and sacrifices to favor the development and progress of christian science."<sup>1</sup>

From the facts presented in this chapter it may be seen that during the middle decades of the last century, although a few reflective thinkers were making independent investigations in the fields Natural Science, Theology and Philosophy, faith in

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1.

Guizot's Meditations on the Essence of Christianity. Preface pp. 6--10.





~~the~~ the traditional interpretations of Scripture was strong. Theology was not critical. It rested essentially, not on the intellect, but on the heart; it had its principles, its arguments, its works which obtruded themselves on reason in the name of transcendent authority. Life was on the side of those who without caring for science, and independent of reason, without anxiety for allegiance with philosophers and with temporary powers, unfolded religious truth according to the traditional orthodox conceptions.

What flourished was free religion based on its own special sanctions--the heart, faith and tradition. On the other hand scientists were coming to consider more and more distinctly that their conclusions rested on objective experiences entirely. Their object was the discovery of the immanent connections of phenomena. Without any intended or preconceived antagonism to the theology of their day, they pursued their work of investigation and observation, noting their conclusions, which, when supplemented by the more thorough investigations and critical interpretations of later scientists, cast discredit on much of the theology of that period. The result was un-



rest, and confusion, and such bitter hostilities between natural scientists and theologians that not until after nearly half a century of observation and critical reflection on the part of master minds did the rumblings of warfare begin to die away.



## CHAPTER II.

New Theories Resulting from Investigation in the Field of Natural Science, and their Bearing on Orthodox Theology.

One of the men who contributed much to the development of new theories which disturbed the peace of the theological world was Mr. Lyell, a distinguished scientist of the last century. Professor Silliman in an "Address to the Association of American Geologists and Naturalists," at Boston, April 24, 1842 said of Mr. Lyell, "To him more than to any other or all other writers on geology, we owe our recovery from the illusions of dreams and visions regarding imaginary powers supposed formerly to exist; but to have become exhausted or greatly enfeebled, or even extinct in modern times. He has proved to us, that the powers of nature are the same now that they have ever been: that, except the act of creation, and the first outbreak of the new-born elements and energies, there was nothing in the geological laws of former ages different from the present; and that the causes





now in operation, acting with greater or less intensity, are sufficient to produce the effect of earlier epochs."

Lyell says, "The growing importance of the natural history of organic remains may be pointed out as the characteristic feature of the progress of the science during the present century. Investigations had evidently a powerful effect in dispelling the illusion which had long prevailed concerning the absence of analogy between the ancient and modern state of our planet. A close comparison of the recent and fossil species and the inferences drawn in regard to their habits, accustomed the geologists to contemplate the earth as having been at successive periods the dwelling-place of animals and plants of different races, some terrestrial and others aquatic--some fitted to live in seas, others in the waters of lakes and rivers. By the consideration of these topics the mind was slowly and insensibly withdrawn from imaginary pictures of catastrophes and chaotic confusion, such as haunted the imagination of the early cosmogonists. Numerous proofs were discovered of the tranquil deposition of sedimentary matter and the



slow development of organic life. As the senses had for ages declared the earth to be at rest, until the astronomer taught that it was carried through space with inconceivable rapidity. In like manner was the surface of this planet regarded as having remained unaltered since its creation, until the geologists proved that it had been the theatre of reiterated change, and was still the subject of slow but never ending fluctuations."<sup>1</sup>

He says, "Many appearances, which had for a long time been regarded as indicating mysterious and extraordinary agency, were finally recognized as the necessary result of the laws now governing the material world; and the discovery of this unlooked for conformity has at length induced some philosophers to infer that during the ages contemplated in geology there has never been any interruption to the agency of the same uniform laws of change. The same assemblage of general causes they conceive may have been sufficient to produce, by their various combinations, the endless diversity of effects of which the shell of the earth has preserved the memorials."<sup>2</sup>

He shows how the growing intelligence of ev-

<sup>1</sup> Lyell's Principles of Geology, Revised edition 1856, p. 60.

<sup>2</sup> Lyell's Principles of Geology p. 62.



ery people leads to a change of view in regard to certain interpretations of physical and moral phenomena. He says, "In an early state of advancement, when a great number of natural appearances are unintelligible, an eclipse, an earthquake, a flood, or the approach of a comet, with many other occurrences afterwards found to belong to the regular course of events are regarded as prodigies. The same delusion prevails as to moral phenomena, and many of these are ascribed to the intervention of demons, ghosts, witches, and other immaterial and supernatural agents. By degrees many of the enigmas of the moral and physical world are explained, and instead of being due to extrinsic and irregular causes, they are found to depend on fixed and invariable laws. The philosopher at last becomes convinced of the undeviating uniformity of secondary causes, and guided by his faith in this principle he determines the probability of accounts transmitted to him of former occurrences, and often rejects the fabulous tales of former times, on the ground of their being irreconcilable with the experience of more enlightened ages."<sup>1</sup>

<sup>1</sup>

Principles of Geology. Lyell. page 62





Sir Humphrey Davy, in *Consolations in Travel*, Dialogue III, "The Unknown", in speaking about various strata or formations of the earth, after noting that those strata which are deepest must be supposed to be the earliest deposited, and calling attention to the order of development as recorded by remains, says, "But in none of these formations, whether called secondary, tertiary or diluvial have the remains of man, or any of his works been discovered; and whoever dwells upon this subject must be convinced, that the present order of things and the comparatively recent existence of man as the master of the globe is as certain as the destruction of a former and different order, and the extinction of a number of living forms which have no types in being. In the oldest secondary strata there are no remains of such animals as now belong to the surface; and in rocks, which may be regarded as more recently deposited, these remains occur but rarely, and with abundance of extinct species, there seems as it were a gradual approach to the present system of things, and such a succession of destructions and creations preparatory to the existence of man."



The conclusions of other natural scientists might be noted to show that scientific researches led to the view that by relatively uniform natural processes, working through long ages, the earth's crust had been slowly modified. The traditional doctrine of creation was being displaced by that of evolution. Sacred cosmogony regarded the formation and modeling of the earth as a direct act of God; it rejected the intervention of secondary causes in those events. But natural science overturned this theory. Instead of creation being comparatively recent, about four thousand years before Christ, and the act of six ordinary days, it has been shown that the earth is very old, and that it has formerly been in a yielding or plastic condition, and its present conditions are the result of ages of development according to relatively uniform natural processes. Sacred science taught that the deluge was universal, and some theological writers pointed to marine shells, found on mountain tops far in the interior of continents as an indisputable evidence. But this was discredited when Draper pointed out the fact that, "geological students proved that in the crust of



the earth vast fresh-water formations are repeatedly intercalated with vast marine ones, like the leaves of an book, for which no single cataclysm was sufficient to account." <sup>1</sup> He says, "The relative ages of formations having been ascertained, it was shown that there has been an advancing physiological progression of organic forms, both vegetable and animal from the oldest to the most recent; that those which inhabit the surface in our times are but an insignificant fraction of the prodigious multitude that have inhabited it heretofore; that for each species now living there are thousands that have become extinct. Though special formations are so strikingly characterized by some predominating type of life as to justify such expressions as, the age of mollusks, the age of reptiles, the age of mammals, the introduction of the new-comers did not take place abruptly as by sudden creation. They gradually emerged in an antecedent age, reached their culmination in the one which they characterize, and gradually died out in a succeeding. There is no such thing as a sudden creation--but a slow development from a pre-existing form." <sup>2</sup>

It is clear that the views presented by theo-

1 Draper's "Conflict Between Science and Religion." p. 191.

2 Draper's "Conflict Between Science and Religion." pp. 191--192.





logical writers as derived from the Mosaic record cannot be admitted. The Mosaic time is too short, the order of creation incorrect and the divine interventions too anthropomorphic. The cumulative evidence brought by scientists was overwhelming against many of the traditional interpretations. No wonder some of the theologians were alarmed. On the bases of this uniformitarian geology the doctrine of the transformation of species began to look more reasonable.

Von Baer's embryological researches and the classifications and embryological studies of Agassiz showed a wonderful parallelism between the growth of the individual life and the relation of each animal form to its neighbors and predecessors on the earth. This parallelism was fruitful in suggestions and soon came to have a deep scientific meaning.

The notion that species became changed in the course of time existed since the time of the classical writers, and persisted more or less throughout the periods following on the progress of Humanism and the revival of learning. Among moderns, Goethe, DeCandolle the elder, Lamarck, Buffon and Chalmers



had foreshadowed some of the conceptions that Darwin's discoveries afterward placed on a solid basis. This fact Darwin himself clearly sets forth in "An Historical Sketch of the Progress of Opinion on the Origin of Species" published before the first edition of "Origin of Species."

The conception of biological development prevailed before his day. Henslow of Cambridge and Sir Chas. Lyell greatly influenced his conclusions. We find that Darwin was known among the undergraduates as, "the man who walks with Henslow".<sup>1</sup> Darwin says, "I always feel as if my books came half out of Lyell's brain, and that I never acknowledge this sufficiently".<sup>2</sup> He says, "Until recently the great majority of naturalists believed that species were immutable productions, and had been separately created. This view has been ably maintained by many authors."<sup>3</sup> This position was meant to conform to the Biblical narratives and seemed to clinch the claim for their divine inspiration. Darwin says, "Some few naturalists on the other hand, have believed that species undergo modification, and that the existing forms of life are descendants by true generation of pre-existing forms."<sup>4</sup>

<sup>1</sup> Darwin's Life and Letters. p. 44

<sup>2</sup> More Letters of Darwin. p. 117

<sup>3</sup> An Historical Sketch p. 1



In the introduction to "Origin of Species"

Darwin says that he was struck with certain facts in the distribution of the organic beings inhabiting South America, and in the geological relations of the present to the past inhabitants of that continent; and that these facts seemed to throw some light on the origin of species. After Darwin's return he chanced to read Malthus' Essay on the Principle of Population. Darwin has been painfully impressed by the immense struggle for existence with which the book deals. The main argument of the book was that nature has self-restraint, and when life increases beyond the proper means of subsistence competition ensues, the weak are crowded out and the strong are established.

It occurred to Darwin that a similar principle operated in the organic world resulting in the formation of new species, and these preventive checks would also account for the destruction of unfavorable variations. In this association between the struggle waged by individual types and the succession and disappearance of species, we have the key





to Darwin's interpretation of evolution.

For my purpose in this dissertation it seems unnecessary to wade through the multitude of facts noted and the elaborate arguments by which Darwin arrives at his conclusions. But the central idea of the "Origin of Species" is that every form of organic life, high and low, is derived from a very small number of original forms. Every variety of vegetable and animal organism, now extant, or having formerly existed, owes its origin to the slow and gradual operations of the modifying influences of local and special causes transmitted by heredity. Whatever forms were best suited to any particular time and locality were selected and adopted by the working of natural laws.

Huxley says he has put Darwin's hypothesis into a shape more convenient for common purposes than he could find in his book. We give it in his words.: "Given the existence of organic matter, its tendency to transmit its properties, and its tendency occasionally to vary; and lastly, given the conditions of existence by which organic matter is surrounded--these put together are the causes of the



Present and the Past conditions of Organic Nature."<sup>1</sup>

He puts the evolutionary thesis clearly in these words, "All species have been produced by the development of varieties from common stocks; by the conversion of these, first into permanent races and then into new species, by the process of natural selection, which process is essentially identical with that artificial selection by which man has originated the races of domestic animals--the struggle for existence taking the place of man, and exerting, in the case of natural, that selective action which he performs in artificial selection."<sup>2</sup>

Darwin says, "Although much remains obscure and will long remain obscure, I can entertain no doubt, after the most deliberate study and dispassionate judgment of which I am capable, that the view which most naturalists until recently entertained, and which I formerly entertained--namely, that each species has been independently created--is erroneous. I am fully convinced that species are not immutable; but that those belonging to what are called the same genera are lineal descendants of some other and generally extinct species, in the

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<sup>1</sup> Huxley's Origin of Species. p. 131, 1872.

<sup>2</sup> Huxley's Collected Essays: Darwiniana p. 71.



same manner as the acknowledged varieties of any one species are the descendants of that species. Furthermore I am convinced that natural selection has been the most important, but not the exclusive means of modification."<sup>1</sup>

Darwin was not alone in his views of evolution. When he read the essay by Wallace on "The Tendency of Varieties to Depart Indefinitely from the Original Type," he saw that it contained the gist of his own theory. He wrote to Lyell and sent the document, saying, "I never saw a more striking coincidence; if Wallace had had my manuscript written out in 1842 he could not have made a better short abstract."<sup>2</sup>

Huxley was the great exponent of Darwin's view, and his statements gave it weight. He says, "I do not know of any proposition that has been put before us with the intention of explaining the phenomena of organic nature, which has in its favor a thousandth part the evidence which may be adduced in favor of Mr. Darwin's view. I really believe that the alternative is either Darwinism or nothing, for I do not know of any rational conception or theory of the organic universe which has any scientific position at

<sup>1</sup> Darwin's Introduction to Origin of Species. p. 6. Reprint from the 6th London Edition.

<sup>2</sup> Darwin's Life and Letters N. Y. 1893 Vol. I p. 473





at all beside Mr. Darwin's"<sup>1</sup>.

Huxley particularly notes his belief that Darwin's principle of evolution applies as much to man as to the lower mammals. He says "It is perfectly demonstrable that the structural differences which separate man from the apes are not greater than those which separate some apes from others. There cannot be the slightest doubt in the world that the argument which applies to the improvement of the horse from an earlier stock, or of ape from ape, applies to the improvement of man from some similar and lower stock than man. There is not a single faculty--functional or structural, moral, intellectual or instinctive--there is no faculty whatever that is not capable of improvement; there is no faculty whatsoever which does not depend upon structure; and as structure tends to vary, it is capable of being improved. The further science advances the more extensively and consistently will all the phenomena of nature be represented by materialistic formulae and symbols, and as surely as every future grows out of the past and present, so will the physiology of the future gradually extend the realm of matter and law

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<sup>1</sup> Huxley's Origin of Species. N. Y. 1872. p. 143



until it is coextensive with knowledge, with feeling<sup>1</sup> and with action."

Darwin's *Origin of Species* conceived in his mind in 1842 and published in 1859 was looked upon as the crowning triumph of the historical movement, which since the time of Geoffrey, Saint-Hilaire and Buffon and Lamarck was pressing forward in search of the key to the "mystery of mysteries", the origin of species.

Darwin's doctrine of evolution, as we shall see gave a shock to the old conceptions based on the assumption of the superiority of the fixed and final. It introduced a mode of thinking that in the end was bound to have an important bearing on orthodox theology and to transform the treatment of morals, politics and religion.

As the doctrine of evolution first took firm footing upon the ground of natural science, and was not until later transferred to the historical and social life of mankind, so it first came into relation with theology from that side. The traditional doctrine of the church regarding creation was based either on Moses or on Milton. The prevalent view

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Huxley's *Origin of Species*. p. 146



was that the world was made in six days, and that man began his existence in Paradise. This view was put in question by the evolutionary theory, according to which our solar system was developed out of a gaseous nebula, and life upon the gradually cooled surface of our earth advanced step by step through long periods of time from the lowest organisms up to the higher modes of existence, and primitive man was developed out of the latter ; accordingly early man, far from representing the ideal of mankind, stood on the contrary, very remote from this, and quite near his brute ancestors. The evolutionary method knows no absolute, within the phenomenal world, but everywhere and always only the relative; the only thing that abides in the flow of the becoming, is the law becoming.

The significance of Darwin's contribution aroused a storm. Theologians spoke out in protest against the new theory and in favor of the orthodox view.

Dr. Buckland, a prominent and energetic scientist of the clerical order, uncompromisingly asserted that all scientific teaching must be forever sub-





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ordinated to the cosmogony of Genesis.

The theology of the day was accustomed to view spiritual principles as inextricably woven into the dogmas of direct creation. Natural selection as then understood threatened to substitute mere physical force for the creative and operative and beneficent wisdom of God. It looked as if there was no need of a directing creator for matter in motion was all that was necessary to account for everything.

Herbert Spencer came upon the scene when the theory of Darwin was making positive gains through its own worth, and when men were anxious to apply the new theory to all forces in the universe.

From what has already been said it may be seen that there was then much confusion and contradiction, and some vital inspiration, all of which came to utterance in the philosophy of Spencer as he tried to gather up and express the half formulated cravings of the day for a new system of philosophy founded on Darwinism.

Spencer's book, "First Principles" published in 1862 sets forth the main arguments, and conclusions of his system. As some of his main conclusions

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Charles Darwin and Other English Thinkers.  
S. P. Cadman p. 23.



are noted, it may be seen how incompatible they are with the views of orthodox theology. The first main axiom of the new philosophy is the doctrine of the unknowable. He covers one hundred and twenty pages in its unfolding.

He holds that Atheism, Pantheism, and Theism, three rival attempts to explain the secret of the universe are equal failures; and that the common fault is that they believe in "self-existence somewhere." The secret cannot be explained. Religious Nihilism is the only consistent and tenable theory, the "fundamental verity" summed up in one maxim-- "The deepest, widest, and certain of all facts is this, that the Power which the universe manifests<sup>1</sup> is utterly inscrutable."

He says, "Appearances without reality is unthinkable." He holds that,

1. there is a something beyond.
2. the something beyond is a reality, and
3. it is unknown and unknowable.

This doctrine set forth by Spencer is incompatible with the great doctrine of the Christian Faith: Deut. 4:29. "But if from thence thou shalt seek the Lord, thou shalt find Him, if thou seek Him

1 Spencer's First Principles. p. 46. London 1862.

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with all thy heart and with all thy soul." Prov. 8:

17. "Those that seek me early shall find me."

Matt. 7:7. "Seek, and ye shall find." It affirms that the Being of God, and every other religious dogma, cannot be proved. It makes those who think they believe in creation and a Creator, victims of an illusion. Religion is another name for ignorance.

According to the theory of Evolution and the materialistic philosophy which many thought it implied everything could be accounted for without the aid of the God of orthodox theology, and the materialistic evolutionists felt that they could eventually conduct the Deity to the verge and, in the language of Comte, "bow Him out with thanks for His provisional services."

Huxley puts the same idea briefly when he says, "The farther science advances the more extensively and consistently will all the phenomena of nature be represented by materialistic formulae and symbols, and as surely as every future grows out of the past and present, so will the physiology of the future gradually extend the realm of matter and law until it is coextensive with knowledge, with feeling, and





with action."<sup>1</sup>

According to the new theory man cannot be the centre and aim of the universe as orthodox theology declared, but a link in the chain of being, a link which is just as surely connected with the rest of existence as worms are connected with the protista, or fishes with worms. Man's superiority, according to the new theory, is but an instance of the extraordinary manner in which the vertebrates have gotten ahead of their congeners in the course of universal evolution.

As the doctrine of evolution regards the human individual as only a transitory combination of natural particles analogous to all other combinations, it would destroy the doctrine of the immortality of the soul as held by orthodox theology.

As the new theories discussed in this chapter were disseminated, uncritical minds, which tended to confuse a doctrine with a particular mode of conceiving it, were led to a denial of purpose altogether, because evolution necessitated a new conception of the way in which purpose is realized, and to believe instead that matter, motion and law explained every-

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<sup>1</sup> Huxley's Collected Essays.

The first part of the paper discusses the importance of understanding the cultural context of the research. It highlights the need for researchers to be sensitive to the values and beliefs of the communities they are studying. This is particularly important in the field of education, where cultural differences can significantly impact learning outcomes.

The second part of the paper presents a review of the literature on cultural competence in education. It examines various studies that have explored the relationship between cultural awareness and student achievement. The findings suggest that educators who are culturally competent are better equipped to meet the needs of diverse students and to create a more inclusive learning environment.

The third part of the paper describes the methodology used in the study. It details the selection of participants, the data collection methods, and the analysis techniques. The study employed a qualitative approach, using interviews and focus groups to gather data from teachers and students. The data was then analyzed using thematic analysis to identify key themes and patterns.

The fourth part of the paper presents the results of the study. It discusses the findings related to the cultural competence of the teachers and the impact of this on student learning. The results indicate that teachers who had received specific training in cultural competence were more likely to use culturally responsive teaching practices, which in turn led to improved student outcomes.

The final part of the paper discusses the implications of the findings for future research and practice. It suggests that further studies should be conducted to explore the long-term effects of cultural competence training on educators and students. Additionally, it emphasizes the need for ongoing professional development for teachers to ensure they remain culturally competent in a rapidly changing world.

thing and God was ruled out as unnecessary, and, as already pointed out, the great fundamental doctrines of traditional theology were either put in question, or declared to be positively false.

It is not to be wondered at that the first advances of the evolutionary philosophy threw the theological and philosophical world into an apparently defenceless plight. The plausibility of the system in its scientific statements lent plausibility also to a philosophical scheme in its implications.

Leading theologians, however, soon regained their equilibrium and prepared for war, in defence of the traditional views, against natural scientists and others, who with equal determination, defended the new theories.

At this stage in the development of Natural Science and Theology it is evident that the declarations of the one were far from being compatible with those of the other.



### Chapter III.

The Conflict Between the Defenders of the Traditional View, and the Advocates of the New Theories.

The attempts to set aside the new doctrines of Natural Science, that the traditional cosmology and paradise-legends, along with all that depends upon them might be retained, were partly ex-cathedra declarations of dogmatic Biblical faith, and partly artificial comparisons between the old and new belief, all of which were prompted by fidelity to religious truth, under the impression that religious truth was correctly and authoritatively set forth in the traditional views. It is difficult to free the unreflective, uncritical mind from the fallacy of confusing a doctrine with a particular mode of conceiving it, particularly, when the mode of conceiving a truth is held to more tenaciously than truth itself.

A reviewer, praising Rev. Dr. Hodge's book against Darwinism says, "Darwinism, whether Darwin knows it or not; whether the clergy, who are half prepared to accept it in blind fright as 'science'





know. it or not--is a denial of every article of the Christian faith. It is supreme folly to talk as some do about accommodating Christianity to Darwinism. If we have all, men and monkeys, women and baboons, oysters and eagles, 'developed' from an original monad and germ, then St. Paul's grand deliverance--'All flesh is not the same flesh. There is one kind of flesh of men, another of beasts, another of fishes, and another of birds. There are bodies celestial and bodies terrestrial'--may be still very grand in our funeral service, but very untrue to fact." <sup>1</sup>

This is the same dangerous line of argument which Caccini indulged in at Galileo's time. The favorite weapon against natural scientists was the charge that these men were "attacking the truth of God," that their work was, "dangerous and disreputable," "a forbidden province" and "an awful evasion of the testimony of revelation."

Dupanloup, the Bishop of Orleans, in an open letter stigmatized Darwin, Huxley, Lyell, and others as authors of "shameful theories," and made special use of the phrase of a naturalist, that "it is more

<sup>1</sup>

Church Journal, New York, May 28, 1874.



glorious to be a monkey perfected than an Adam degenerated."

Wilberforce, Bishop of Oxford, in an address congratulated himself that he was not descended from a monkey. Huxley replied: "If I had to choose I would prefer to be a descendant of a humble monkey rather than of a man who employs his knowledge and eloquence in misrepresenting those who are wearing out their lives in the search for truth."

One of the strong opponents of the Darwinian theory was the Duke of Argyll. He says, "Darwin's theory is a dream. It is not only unsound, but it is in many respects the reverse of truth. With all his conscientiousness, with all his caution, with all his powers of observation, Darwin in this matter fell into errors as profound as the abysses of the Pacific. The overthrow of Darwin's speculations is only beginning to be known. It has been whispered for some time. The cherished dogma has been dropping very slowly out of sight."<sup>1</sup>

He says, "Darwin was ready to confess that serious doubts had been awakened as to the truth

<sup>1</sup>  
Argyll's Reign of Law. p. 301.



of his famous theory." <sup>2</sup>

Rev. E. B. Fairfield of Oberlin, Ohio says he heard Dr. Lyman Beecher in his own pulpit in Cincinnati say, "Brethren: unbelievers reject Genesis because it plainly teaches that this world was made in six days of twenty-four hours each, and they argue against the Bible because forsooth shells are found upon the mountains, and found down deep below the earth's surface. Nonsense, such unbelief! As if the Lord Almighty could not create millions of shells by the word of his mouth just as easily as anything else. A simple denying of Almighty power!"

Prof. Dana, recognized as a naturalist of high authority, published an elaborate paper in the year 1865 entitled, "The Origin of Coral-Reefs and Islands." He devotes many pages to what Mr. Huxley on page one hundred and forty-six of Vol. V of his "Science and Christian Tradition Essays," calls "a most admirable and weighty" criticism of the objections which have been raised at various times to Mr. Darwin's doctrines by Prof. Semper, by Dr. Rein, and by Mr. Murray, and states his final judgment

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as follows:- "With the theory of abrasion and solution incompetent, all the hypotheses of objectors to Darwin's theory are alike weak; for all have made these processes their chief reliance, whether appealing to a calcareous, or a volcanic, or a mountain peak basement for the structure. The subsidence which the Darwinian theory requires has not been opposed by the mention of any fact at variance with it, nor by setting aside Darwin's arguments in its favor; and it has found new support in the facts from the "Challenger's" soundings off Tahiti, that has been put in array against it, and strong corroborations in the facts from the West Indies.

Darwin's theory, therefore, remains as the theory that accounts for the origin of reefs and islands<sup>1</sup>."

"Essays and Reviews" published in 1861 contained broad generalizations, against the authority of the Bible as a standard of faith, all based on statements drawn from the application of the evolutionary theory. The book called forth a protest on the part of orthodox theologians in Germany and England. Writing about these Essays and Reviews J. F. Hurst clearly sets forth the disturbing effect they

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<sup>1</sup>  
American Journal of Science, 1885. p. 190.



had upon the advocates of the orthodox view. In his "History of Rationalism" he says, "The press soon began to teem with replies written from every possible standpoint. Volumes of all sizes, from small pamphlets to bulky octaves, were spread abroad as an antidote to the poison. Hardly a newspaper, religious or secular, metropolitan or provincial, has stood aloof from the contest. Every seat of learning has been agitated, the social classes have been aroused, the entire nation has taken part in the strife. Even some of the First Broad Churchmen have written heartily against its theology and influence. A remarkable feature of the whole controversy is the judicial prosecution of the essayists. Petitions numerously signed were presented to the bishops, praying that some action might be taken against them."<sup>1</sup>

An article entitled "The Fallacies of Evolution" written by a defender of orthodoxy, appeared in 1879 in the July number of the Edinburg Review, to the delight of the enemies of the new theory.

George J. Romanes made a reply to this article in the Fortnightly Review. He says, "The essay as-

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<sup>1</sup> Hurst's "History of Rationalism" p. 497.  
New York 1865.

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pires to show that the whole theory of evolution is a monster-birth of irrational minds, and as may be anticipated from such an estimate of this theory, the essay is written by a man ignorant of the subject which he presumes to expound."<sup>1</sup>

Romanes' reply consists largely of accusations of ignorance on the part of the author of "The Fallacies of Evolution." He says, "Having spoken of the reviewer's ignorance of the 'Origin of Species' and the 'Descent of Man', I may next allude to his ignorance of the 'Variation of Plants and Animals under Domestication.' Here at least total ignorance of the work he names is the most charitable construction that we can put upon the following pages."<sup>2</sup> Then follow some quotations from the "Fallacies of Evolution" of which Romanes says, "Comment on so astonishing a passage would be useless, for nothing I could say could throw its condensed absurdity into any stronger relief."

Thus the battle between the advocates of the new theories and the defenders of the old raged for years; but notwithstanding the bitter protests of orthodox theologians, the doctrine of evolution

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<sup>1</sup> Popular Science Monthly. Nov. 1879.

<sup>2</sup>

Page 7 of Romanes Reply, in Popular Science Monthly. Nov. 1879

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rapidly gained ground.

A few quotations may show the progress of the Darwinian theory and the fact that evolution as a scientific doctrine was regarded as established. In the January number of Popular Science Monthly for 1879, there is an article by Prof. John Tyndall on "Virchow and Evolution." In this article there is a quotation from Dr. Hooker's address to the British Association at Norwich in 1868. He says, "Ten years have elapsed since the publication of the 'Origin of Species by Natural Selection,' and it is therefore not too early now to ask what progress that bold theory has made in scientific estimation. Since the 'Origin' appeared it has passed through four English editions, two American, two German, two French, several Russian, a Dutch and an Italian. So far from Natural Selection being a theory of the past, (the Athenaeum has stated it to be so), it is an accepted doctrine with almost every philosophical naturalist, including a considerable proportion who are not prepared to admit that it accounts for all Mr. Darwin assigns to it." <sup>1</sup> Helmholtz took the same ground in

<sup>1</sup>  
Page 17 of Tyndall on "Virchow and Evolution" in Popular Science Monthly. January, 1879.



1869, says Tyndall. On page 17 of the article referred to, written by Tyndall in 1879, he says, "Another decade has now passed, and he is simply blind who cannot see the enormous progress made by the theory during that time. The hostility and fear which so long prevented the recognition of Mr. Darwin, by his own University, have vanished, and this year, Cambridge, amid universal acclamation, conferred on him her Doctor's degree. The Academy of Science in Paris, which had so long persistently closed its doors against him, has also yielded at last; while sermons, lectures and published articles, plainly show that even the clergy have, to a great extent become acclimatized to the Darwinian air. My reference to Mr. Darwin in the Birmingham address was based upon the knowledge that such changes had been accomplished, and were still going on."

The attempt to scare men from the study and propagation of scientific truth failed, and the scientific doctrine of evolution was regarded as established and supreme.

From the incidents of the conflict already

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cited, it may be seen, that traditional theology was held to be incompatible with the new theories. The doctrine of creation was thought to be incorrect in view of the established doctrine of evolution. God was ruled out, by evolutionists, as unnecessary, since Natural Selection was held to be doing all that was being done. Many of the cherished doctrines of theology were supposed to be nullified by the new theory, and relegated to the realm of mythology. The faith of many was disturbed, atheism, agnosticism, and materialism became prevalent, theology was thought to be inconsistent with scientific truth, and Religion, was regarded, even by many thinking men, as a myth.

But faith in God, is hard to kill, for the soul of man "cries out after the living God", and can be satisfied only in Him. So although faith's foundations were apparently swept away, human hearts still persisted in the hope that somehow the apparently insurmountable barrier in the pathway of Religion might be removed, and that a more thorough understanding of the new doctrines and their impli-





cations might reconcile Religion, and even theology, with scientific truth.

The exercise of this very hope was the inspiration, and the first step requisite for the work of critical reflection which brought about a relation between natural science and theology which, the author of this dissertation holds is an improvement on that of fifty years ago.



#### Chapter IV.

The Work of Discrimination Which Freed The Doctrine of Evolution From Some Erroneous Implications, and Theology From Some of its Unwarranted Assumptions.

The desire for a more thorough understanding of the new doctrines and their implications, whereby Natural Science might be reconciled to Religious truth, was not to be left unsatisfied.

There came upon the scene a class of men who could see farther and penetrate deeper into the truths and implications and fallacies of the claims of Natural Science. By critical reflection they helped to clear away false conceptions in both Natural Science and Theology. They had faith that there is a power in the universe, strong enough to make truth-seeking safe, and good enough to make truth-telling useful. They knew how to separate truth from error, to sift out half truths and false implications. They saw the folly of the outcries and attempts against scientific truth, on the basis of mistaken interpretations, because of inadequate



information. They also saw the folly of drawing scientific conclusions from Biblical texts. Those who were inclined to do so were recommended by Dr. Deems in Popular Science Monthly for February, 1876, to take the advice of a good old German divine of the Reformation period: "Seeking the milk of the Word do not press the teats of Holy Writ too hard."

Many clergymen could not cease their hostility to scientific study. But the greater minds gradually came to realize its benefits to humanity. The attitude taken by Dr. John Cotton Smith represents this latter class. His view was far more logical, modest, sagacious, and full of faith than many of his associates. He says, "For geology, physiology, and historical criticism have threatened, or destroyed only particular forms of religious opinion, while they have set the spirit of religion free to keep pace with the larger generalizations of modern knowledge."

The task of clearing the atmosphere of the fallacies that were accepted as scientific and philosophical truths or implications, was a tremendous.





undertaking. Nevertheless the splendid work was done.

Charles F. Deems, in the opening address at the inauguration at Vanderbilt University, Oct. 4, 1875, spoke on "Science and Religion." His first sentence sounds the key note of the new thought which was to bring about the improved relation between the scientific doctrine of evolution and theology. He says, "The recent cry of the "Conflict of Religion and Science," is fallacious and mischievous to the interests of both science and religion; and would be most mournful if we did not believe that, in the very nature of things, it must be ephemeral. Its genesis is to be traced to the weak foolishness of some professors of religion, and to the weak wickedness of some professors of science. No man of powerful and healthy mind who is devout, ever has the slightest apprehension that any advancement of science can shake the foundations of that faith which is necessary to salvation. All this dust about "the conflict", has been flung up by men of insufficient faith, who doubted the basis of

The first of these is the fact that the  
 government has been very successful in  
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 has been achieved by a combination of  
 measures, including a reduction in  
 government spending and an increase in  
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 the government has been successful in  
 reducing the inflation rate. This has been  
 achieved by a combination of measures,  
 including a reduction in the money  
 supply and an increase in interest rates.  
 The third is the fact that the government  
 has been successful in reducing the  
 unemployment rate. This has been  
 achieved by a combination of measures,  
 including a reduction in government  
 spending and an increase in tax revenue.  
 The fourth is the fact that the  
 government has been successful in  
 reducing the foreign debt. This has  
 been achieved by a combination of  
 measures, including a reduction in  
 government spending and an increase in  
 tax revenue. The fifth is the fact that  
 the government has been successful in  
 reducing the trade deficit. This has  
 been achieved by a combination of  
 measures, including a reduction in  
 government spending and an increase in  
 tax revenue. The sixth is the fact that  
 the government has been successful in  
 reducing the current account deficit. This  
 has been achieved by a combination of  
 measures, including a reduction in  
 government spending and an increase in  
 tax revenue. The seventh is the fact  
 that the government has been successful  
 in reducing the budget deficit. This has  
 been achieved by a combination of  
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 that the government has been successful  
 in reducing the overall deficit. This has  
 been achieved by a combination of  
 measures, including a reduction in  
 government spending and an increase in  
 tax revenue.

their faith; or by men of insufficient science who have mistaken Theology of the Church for Religion; or by unreasonable and wicked men who have sought to (prevent)? the teachings of science so as to silence the voice of conscience in themselves. It may be profitable to discriminate these; and if badges and flags have become mixed in the fray, it may be well to readjust our ensigns, so that foes shall strike only at foes."<sup>1</sup>

He then sets out to settle distinctly what science is and what religion is, and points out that both are valuable and, rightly understood, they do not conflict. He says, "In religion as in science we walk by faith; that is, we believe in the probabilities sufficiently to act upon them. So far from any conflict between science and religion, their bases are the same, their modes are similar, and their ends are identical, viz. what all life seems to be, that is, a discipline in faith."<sup>2</sup>

According to this view, scientific knowledge would be conducive to faith; and this is just the fact. Prof. Agassiz felt the same strengthening

<sup>1</sup>)  
<sup>2</sup> Popular Science Monthly. Nov. 1875.



of faith in the midst of scientific investigation. Upon one occasion when he and a company of Harvard students were in a quarry studying a strange formation he said, "Hats off boys, there is a great Being here."

Mr. Deems, in his address holds that one cause of the "conflict" is the confounding of Theology with Religion. He says, "Theology is not religion, any more than psychology is human life, or zoölogy is animal life, or botany is vegetable life. Theology is objective; religion is subjective. Theology is a scientific classification of what is known of God; religion is a loving obedience to God's commandments. Every religious man must have some theology, but it does not follow that every theologian must have some religion. A religious man knows and feels that it would be as irreligious in him to reject any truth found in Nature, as it would be for another to reject any truth found in the Bible. There is no necessary conflict between even theology and any other science. All true science is a new sight of God. Science has the finite for its domain,





religion the infinite; science deals with the things seen, and religion with the things not seen. The creation of the world and its end are not questions of science, and can be known only as revealed to faith, and so Paul says, "Through faith we apprehend intellectually that the worlds have been framed by the word of God, so that that which is seen may have sprung from that which is not seen." Heb. 11:3.<sup>1</sup>

Such statements as these from a man like Dr. Deems could not fail to have an enlightening and soothing effect upon those who were confused by the cry of "conflict."

The conflict, by its enlightening operations brought about an attitude toward ancient dogmas which was advantageous to real religion, and compelled theology to be more nearly a correct statement of religious truth.

R. W. Boodle in an article on "Natural Religion" calls attention to the change of attitude toward ancient dogmas. He says, "The church has entered upon that phase when minds of the higher order are seldom found to receive its ancient dogmas with complete



conviction. Before 1873-1874, hostility to orthodox Christianity was more or less openly shown by the chief writers of science, history, art, morals, etc., but since these years this tone has been generally abandoned for one of supreme indifference or of perfect fairness."<sup>1</sup>

Joseph Le Conte, a distinguished American geologist, by his book on "Religion and Science", did much to free the doctrine of evolution and theology from some erroneous implications and misconceptions and to show the harmony between the truths of Nature and the truths of Scripture.

He suggests that the general spirit of the two books should outweigh what seems to be literal interpretation of some passages, and that the accordance of the two books in the grand spiritual truths which form the basis of religion, should overbalance apparent minor discrepancies in matters which are of little spiritual significance, and asserts that the distress and doubt occasioned by the advance of science to the religious mind must be perpetual, unless we rise to a higher and broader and more philosophical point of view. He says, "I believe it is the duty



of every scientific man, who is also a lover of his fellow-men, to attempt to restore again the faith which he himself, perhaps, has helped to destroy; to build again the foundations of faith upon a more solid, enduring, and rational basis."<sup>1</sup>

In the first paragraph of chapter XV of Science and Religion, Le Conte says that the antagonism between the teachings of Scripture and the teachings of Nature are far more apparent than real; that it arises in great measure from the misconceptions and misunderstandings which exist on both sides; that if these be removed, nearly the whole antagonism disappears. In the two lectures XIV and XV of his book he states and tries to remove several of these misconceptions.

The first difficulty in the way of compatibility between Natural Science and the traditional view is, a misconception, on the part of many religious persons, of the very nature of inductive evidence. He says, "When the doctors disagree, then the people assume the right to think for themselves. But, if there were an absolute unanimity of belief on a sub-

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<sup>1</sup>

Religion and Science. Le Conte p. 333. 1880.





ject in all the best minds, there is not the least doubt that the authority of such unanimity would and ought to be complete, and free inquiry and individual opinion would no longer be thought of as a right. Now, in regard to the creation of the cosmos by evolution, scientific unanimity is already complete, and therefore, scientific authority ought also to be complete. No man who has not studied the subject profoundly has any right to disbelieve. A position of unbelief is a violation of the laws of reason--is irrational. Undoubtedly, therefore, Scripture ought, now, to be interpreted in accordance with these facts."<sup>1</sup>

The next difficulty is, a mistake on both sides as to the nature and object of so-called schemes of reconciliation, which do not reconcile, as science advances; for new facts are discovered and the proposed interpretation is no longer acceptable to science, and faith again receives a shock. He holds that these schemes of reconciliation ought not to be regarded as final or perfect interpretations of either book. They ought to be intended to show on-

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<sup>1</sup>

Religion and Science Le Conte. p. 237. 238.



ly that there is no necessary and irreconcilable antagonism at all. There may be many interpretations, any of which may reconcile the discordance, and yet none of them be the true and final one; but they show that the two books are not fatally irreconcilable.

Another difficulty is the confounding of our formulated systems of belief with Divine truth, the human form with the Divine reality, our interpretations with Divine revelation, science with nature, theology with Scripture. Still another difficulty, and closely connected with the latter, is the non-recognition of the sacredness and the Divine authority of the teachings of nature. We cannot say that the Scriptures only are sacred and authoritative, and that nature is profane. Both are sacred, though perhaps in different degrees, and regard or disregard of their teachings is vitally related to our highest welfare. The one is the Divine text-book of truth, especially physical truth; the other is the Divine text-book of conduct and of moral truth.

Another misconception, is the supposition that



though science is acknowledged to be changing and progressive, theology is unchanging and non-progressive because it is already complete and perfect.

"The knowledge derived from the interpretation of both is progressive. If both books are Divine and infinite, and the interpretation in each case is human and finite, the human knowledge derived from interpretation of each must of necessity be progressive. Science is progressive mainly through the exercise of human reason; theology is progressive mainly through the purification, by Divine illumination, of the human heart."<sup>1</sup> The scientist should beware lest in his eager grasping after the new, he mistake his unverified crudities for eternal truth; and the theologian should also beware lest haply, in his blind and mistaken zeal, he be found fighting against God Himself. Christ was rejected by his own people upon (what they supposed) scriptural grounds.

Another misconception is mistaking Scripture for a scientific treatise, and therefore attributing to it, and exacting from it, scientific accuracy of language and statement. The language of Scripture is never intended to be a scientific statement. The

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<sup>1</sup> Religion and Science. Le Conte p. 253.





language of Scripture in regard to external nature is always the language of the senses, the language of appearance. We all use this language every day. We speak of the fixedness of the earth, of the rising and setting of the sun and yet no one accuses us of falsity.

Le Conte points out difficulties that would arise if the Scripture had used scientific language. "Suppose, instead of saying, 'I set my bow in the clouds,' it had spoken of reflection and refraction and the dispersion of light. This would have involved the necessity of a Divine treatise on optics, and this again, another on mathematics; and, in the mean time, the moral truths, the glorious hopes, contained in this beautiful passage, would have been entirely lost. Suppose, instead of saying, 'steadfast as the earth which cannot be moved,' it had said steadfast as the sun: the explanation of language so contrary to the appearance of things would have necessitated a Divine treatise on astronomy, and this, again, another on mathematics; and in the mean time the moral effect of this beautiful illus-



tration of the unchangeableness of Deity would have<sup>1</sup>  
been lost."

Nature and Scripture are intended to teach different things; the one to teach physical truth, the other to teach moral and spiritual truth. The Scripture, speaking of the sun rising and setting, is only using the common, popular language of appearance. The early church interpreted this to mean, and, therefore to assert, that the sun moved around the earth. In the minds of Christians, the science of these early times became indissolubly connected with the words of Scripture, and they unconsciously pledged Scripture to the truth of their science, and, when their science was proved to be false the Scripture seemed to be discredited. The language referring to the creative days was also shown to be falsely interpreted by the advance of science, and for a time some thought the Scripture declaration was discredited.

Le Conte gives what he thinks is a simple, practical, rational rule, which covers nearly, if not quite every case of apparent conflict between the teachings of nature and the teachings of Scripture. It is this: "If the question be a question



in physical science, if the subject be one which is clearly revealed in nature, then without hesitation, I would follow the teachings of nature even though some scriptural allusions to natural phenomena by our traditional interpretation may seem to teach differently. But if the question be a question of moral and spiritual truth, and the teachings of Scripture are clear and unmistakable, then I follow the Divine text-book of moral and spiritual truth, in spite of some dim intimations in external nature and in my own intuitions which seem to point to a different conclusion."<sup>1</sup>

One who is seeking to know only the truth, but who has been disturbed by any apparent conflict between evolution and theology will surely be impressed by the reasonableness of Le Conte's arguments, and will feel his anxious fears have somewhat, if not entirely, subsided. His regard for the teachings of nature will be heightened while his reverence for the teachings of Scripture will be none the less. He cannot fail to see that the scientific doctrine of evolution is not incompatible with a

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<sup>1</sup>

Religion and Science . Le Conte. p 260.





theology that is an interpretation of Scripture from the broader and higher and rational viewpoint.

Henry Ward Beecher in his book, "Evolution and Religion" has thrown much light, for the popular mind, on the doctrine of evolution, and also on religious truth as independent of, and unfettered by, traditional theological theories, and has made not a little contribution to the work of putting an end to the apparent conflict between evolution and theology.

He calls attention to some popular errors regarding the Evolutionary philosophy. He says, "A vague notion exists with multitudes that science is infidel, and that Evolution in particular is revolutionary--that is, revolutionary of the doctrines of the Church. Men of such views often say, 'I know that religion is true. I do not wish to hear anything that threatens to unsettle my faith.' But faith that can be unsettled by the access of light and knowledge had better be unsettled. The intensity of such men's faith in their own thoughts is deemed to be safer than a larger view of God's thoughts. Others speak of evolution as a pseudo-science teach-

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ing that man descended from monkeys, or ascended as the case may be. They have no conception of it as the history of the divine process in the building of the world. The ascent of man from the anthropoid apes is a mere hypothesis. It has not been proved, and I see certainly no present means of proving it. It stands in the region of hypothesis, pressed forward by a multitude of probabilities. Of one thing I am certain, that whatever may have been the origin, it does not change either the destiny or the moral grandeur of man as he stands in the full light of civilization today." <sup>1</sup> In chapter II, entitled, The two Revelations, Beecher makes a few statements which show clearly his views. He says, "It may be said that evolution is accepted as 'the method' of creation by the whole scientific world, and that the period of controversy is passed and closed. While the scientific world is at agreement upon this 'order' of occurrence, it has been much divided as to the 'causes' which have operated to bring about these results. There is a diversity of opinion still, but with every decade scientific men are drawing together to a common ground of belief. The theory of evolu-

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<sup>1</sup>

Evolution and Religion. Beecher. p. 48. 49.  
New York 1885.



tion is the working theory of every department of physical science all over the world. The time is coming when the doctrine of evolution, or the method of God in the creation of the world, will be just as universally accepted as either of the great physical doctrines, the heliocentric theory of Copernicus, or the Newtonian doctrine of gravitation. Evolution is substantially held by men of profound christian faith: by the now venerable and universally honored scientific teacher, Professor Dana of Yale College; by Professor Le Conte of the University of California, an elder in the Presbyterian Church; by President McCosh of Princeton College, a Presbyterian of the Presbyterians; by Professor Asa Gray of Harvard University, a communicant of the Christian Church; by increasing numbers of Christian preachers in America; by Catholics like Mivart in England; by Wallace, a Christian of the spiritualistic school; by the Duke of Argyll; by Ground, an ardent admirer of Herbert Spencer; and finally, among hundreds of others: soundly learned and Christian men, by the Bishop of London, Dr. Williams,





whose Bampton Lectures for 1884 contain a bold, frank, and judicial estimate of Evolution, and its relations to Christianity.

While evolution is certain to oblige theology to reconstruct its system, it will take nothing away from the grounds of true religion. It will strip off Saul's unmanageable armor from David, to give him greater power over the giant. The distinction between natural and revealed religion will be obliterated, both of which are the testimony of God; one God's testimony as to what is best for man in his social and physical relations, and the other, what is best for man in his higher spiritual nature. It is the duty of the friends of simple and unadulterated Christianity to hail the rising light and to uncover every element of religious to its wholesome beams. The Bible itself is one of the most remarkable monuments of the truth of the evolutionary process."<sup>1</sup> "I firmly believe that the acceptance of this doctrine, which seems to me inevitable, is to be one of God's most effective instruments in intensifying and hastening the progress of blessed changes in the church which will be for its greater

<sup>1</sup> Evolution and Religion. Beecher. pp 50-54



health and power among men."<sup>2</sup>

It is clear from the foregoing, that Beecher pointed out a few of the then popular errors regarding the evolutionary philosophy, and set forth the doctrine of evolution as a method of creation in its true light; and while this scientific doctrine shows some of the traditional theological views to be unwarranted, it is not essentially incompatible with a theology that is an interpretation of Scripture from the broader and higher viewpoint of modern scholarship.

In a volume entitled, "Darwin and Modern Science," a compilation of essays in commemoration of the centenary of the birth of Charles Darwin and of the fifteenth anniversary of the publication of the Origin of Species, edited by A. C. Seward and published in 1909 by the University Press Cambridge, P. H. Waggett has an article, "The Influence of Darwin upon Religious Thought." In the first sentence he says, "The object of this paper is first to point out certain elements of the Darwinian influence upon religious thought, and then to show reason for the



conclusion that it has been, from a christian point of view, satisfactory."

He calls attention to the fact that Darwin by raising the dignity of natural science, encouraged the development of the scientific mind, and gave to religious students the example of patient and ardent investigation, and drove them to seek the grounds of reassurance in a science of their own, in a method of experiment, of observation, of hypothesis checked by known facts. In this work they were not without the sympathy of men of science.

He says, "I submit that the more men know of actual christian teaching, its fidelity to the past, and its sincerity in face of discovery, the more certainly they will judge that the stimulus of the doctrine of evolution has produced in the long run vigor as well as flexibility in the doctrine of  
<sup>1</sup>  
 Creation and of man."

In speaking of Natural Selection and Design, he shows that natural selection does not necessarily destroy the Theistic conception. The teleologist said, "The organism fits the niche because the Cre-

<sup>1</sup>  
 Darwin and Modern Science--Cambridge 1909. p. 490.





ator formed it so as to fit." The naturalist said, "The organism fits the niche, because unless it fitted it could not exist." The theologian said, "It was fitted to survive." The selectionist said, "It survives because it fits." Waggett says, "The two forms of statement are not incompatible; but the new statement, by provision of an ideally universal explanation of process, was hostile to a doctrine of purpose which relied upon evidences always exceptional however numerous.

Science persistently presses on to find the universal machinery of adaption in this planet; and whether this be found in selection, or in direct-effect, or in vital reactions resulting in large changes, or in a combination of these and other factors, it must always be opposed to the conception of a Divine Power here and there but not everywhere active. For science the Divine must be constant, operative everywhere and in every quality and power, in environment and in organism, in stimulus and in reaction, in variation and in struggle; in hereditary equilibrium, and in "the unstable state of



species;" equally present on both sides of every strain, in all pressures and in all resistances, in short in the general wonder of life and the world. And this is exactly what the Divine Power must be for religious faith.

The point I wish once more to make is that the necessary readjustment of teleology, so as to make it depend upon the contemplation of the whole instead of a part, is advantageous quite as much to theology as to science. For the older view failed in courage. Here again our theism was not sufficiently theistic. The world is not less venerable to us now, nor less eloquent of the causing mind,<sup>1</sup> rather much more eloquent and sacred."

It is evident that Waggett does not regard the doctrine of evolution as opposed to modern theology, and destructive of scripture teachings, but rather that it has led to improvements in the preaching of the christian faith, and to a higher and more sacred conception of the causing God whose power and activity and wisdom are manifest everywhere and always.

<sup>1</sup> Darwin and Modern Science. p. p. 491. 492.



As early as 1873 J. W. Draper, who has written a book on "The Conflict between Religion and Science," foresaw the issue of the conflict. He says in the last paragraph of this book, "As to the coming conflict, can any one doubt? Whatever is resting on fiction and fraud will be overthrown. Institutions that organize impostures and spread delusions must show what right they have to exist. Faith must render an account of herself to Reason. Mysteries must give place to facts. Religion must relinquish that imperious, that domineering position which she has so long maintained against Science. There must be absolute freedom for thought. What Esdras wrote more than twenty-three centuries ago,--"As for Truth it endureth and is always strong; it liveth and conquereth for evermore," still holds good."

In speaking about those who welcome the advancement of knowledge, and reverence truth, from whatever quarter it comes, he says, "Recognizing the apparent discrepancies between the interpretations of revealed truth and the discoveries of science, they have always expected that satisfactory explanations and reconciliations would ensue, and in this

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<sup>1</sup>  
Conflict Between Religion and Science. Draper.  
p. 367. New York 1875.





they have not been disappointed."<sup>1</sup>

Draper holds that there is no necessary incompatibility between evolution and the teachings of Scripture, rationally interpreted.

J. W. Dawson, the celebrated Canadian, geologist and naturalist, for some time Principal and Vice-Chancellor of McGill University, Montreal, published a work, "The Story of The Earth and Man" in which, particularly in chapters XIV and XV, he, lays bare some of the false assumptions and errors connected with the evolutionary theory, and then states briefly, the theory of creation as it may be held by a modern man of science. He points out the insufficiency of the doctrine of evolution by natural selection alone, as a theory of the cause of the production of species. He says, "With regard to species, however, it must be observed that naturalists are not agreed as to what constitutes a species. Many so-called species are probably races or varieties, and one benefit of these inquiries has been to direct attention to the proper discrimination of species from varieties among animals and plants. The

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<sup>1</sup>  
Preface to, "Conflict Between Religion and Science."  
p. 10.



loose discrimination of species, and the tendency to multiply names, have done much to promote evolutionist views; but the researches of the evolutionists themselves have shown that we must abandon transmutation of true species as a thing of the present; and if we imagine it to have occurred, must refer it to the past."<sup>1</sup>

He calls attention to certain gaps or breaks which require to be cunningly filled with artificial material, in order to give an appearance of continuity to the whole. These are, that between dead and living matter, between vegetable and animal life, between any species of animal or plant and any other species, between the nature of the animal and the self-conscious, reasoning, moral nature of man. He says, "The men who evolve all things from physical forces do not yet know how these forces can produce the phenomena of life even in its humblest forms; and in every case hitherto the effort to produce some of the lowest forms of life, either from dead organic matter, or from merely mineral substances has proved vain."<sup>2</sup>

<sup>1</sup> Dawson's, "The Story of the Earth and Man." p. 328 New York, 1874.

<sup>2</sup> Dawson's "The Story of the Earth and Man p. 326.



"No proof exists that any creature on the extreme verge of the plant kingdom, was capable of passing the limit and becoming an animal."<sup>1</sup>

"The gap between any species of animal or plant and any other species, yawns as wide as ever, since it must be admitted that no case has been ascertained in which an individual of one species has transgressed the limits between it and other species. However extensive the varieties produced by artificial breeding, the essential characters of the species remain, and even its minor characters may be reproduced, while the barriers established in nature between species by the laws of their reproduction, seem to be absolute."<sup>2</sup>

"We not only have no proof that any animal can, by any force in itself, or by any merely physical influences from without, rise to the self-conscious moral nature of man; but the thing is in the highest degree improbable."<sup>3</sup>

After discussing the subject he says, "What, then, is the actual statement of the theory of creation as it may be held by a modern of science? Sim-

<sup>1</sup> Dawson's "The Story of the Earth and Man." p. 326

<sup>2</sup> " " " " " " " " p 327-328.

<sup>3</sup> Dawson's "The Story of the Earth and Man" p. 328.





ply this; that all things have been produced by the Supreme Creative Will, acting either directly or through the agency of forces and materials of His own production."<sup>1</sup>

He adds, "Man may be a product of creation, yet his creation may have been in perfect harmony with those laws of procedure which the Creator has set for his own operations. He may have been preceded by other creations of things more or less similar or dissimilar. He may have been created by the same processes with some or all of these, or by different means. His body may have been created in one way, his soul in another. After his creation, spontaneous culture and outward circumstances may have moulded him into varieties, and given him many different kinds of speech and of habits. These points are so obvious to common sense that it would be quite unnecessary to insist on them, were they not habitually overlooked or misstated by evolutionists. In order that there be a creation there must be a primary Self-existent Spirit, whose will is supreme. The evolutionist cannot refuse to admit this on as good ground as that on which we hesitate to receive

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Dawson's "The Story of the Earth and Man." p. 340.



the postulates of his faith. It is no real objection to say that a God can be known to us only partially, and, with reference to His real essence, not at all; since, even if we admit this, it is no more than can be said of matter and force."<sup>1</sup>

Viewing the doctrine of evolution freed from its unproven assumptions, and set forth in its true light as a method of procedure, rather than a blind cause making all that is, out of nothing, and the traditional theology freed from its unproven assumptions and dogmas, Dawson would lead us to believe there was no essential incompatibility between them. The doctrine of evolution implying all the assumptions and misconceptions connected with it as held fifty years ago could not be harmonized with either the theology of fifty years ago or that of recent years. It is evident that the development in natural science and theology has improved the relation between the doctrine of evolution and the modern interpretation of Scripture.

Andrew Dixon White, when president of Cornell University saw the folly of hostility on the part of the church toward the advance of science; and

<sup>1</sup>

Dawson's "The Story of the Earth and Man" p.p. 341. 343



as clearly perceived that the so-called conflict between Science and Religion was a struggle between Science and Dogmatic Theology; and that if scientific truth and scriptural truth could be disentangled from misconceptions and fallacious implications, there would be no incompatibility between the declarations of the Book of Nature and the Book of Scripture; for, "God's truths must agree, whether discovered by looking within upon the soul or without upon the world. A truth written upon the human heart today, in its full play of emotions or passions, cannot be at any real variance even with a truth written upon a fossil whose poor life ebbed forth millions of years ago."<sup>1</sup>

Mr. White registered himself in favor of scientific investigation, and the application of the scientific method to the study and interpretation of Scripture.

In his book, "The Warfare of Science," he aims to show that, in all modern history, interference with science in the supposed interest of religion, no matter how conscientious such interference may have been, has resulted in the direst evils both to

<sup>1</sup>

White's "Warfare of Science." p. 8. New York 1876.

the first of these is the fact that the system is not a simple one, and that the results are not always the same.

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The fifteenth of these is the fact that the system is not a simple one, and that the results are not always the same.



religion and to science--and invariably; and on the other hand, all untrammelled scientific investigation, no matter how dangerous to religion some of its stages may have seemed, for the time, to have invariably resulted in the highest good of religion and of science.<sup>1</sup> Even at this time, 1876, White believed that the struggle was not between Science and Religion but between Science and Dogmatic Theology. In his book on this subject, published in 1896, he says, "I am convinced of it now."

White calmed the fears of theologians by reminding them that religion in the past suffered nothing from the advance of science; and he assured them that the new scientific doctrine of evolution when rightly understood would be no detriment, but rather a benefit, to religion.

The conclusions of his argument in "The Warfare of Science" he briefly states as follows: "You have seen the conflicts between Ecclesiasticism and Science, in Physical Geography, as to the form of the earth; in Astronomy as to the place of the earth in the universe and the evolution of stellar systems"

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White's Warfare of Science. p. 8.



in accordance with law; in Chemistry and Physics; in Anatomy and Medicine; in Geology; in Meteorology; in Cartography; in the Industrial and Agricultural Sciences; in Political Economy and Social Science; and in Scientific Instructions; and each of these when fully presented has shown the following results:

First. In every case whether the war has been long or short, forcible or feeble, science has at last gained the victory.

Second. In every case, interference with science, in the supposed interest of religion, has brought dire evils on both.

Third. In every case, while this interference, during its continuance has tended to divorce religion from the most vigorous thinking of the world, and to make it odious to multitudes of the most earnest thinkers; the triumph of science has led its former conscientious enemies to make new interpretations and lasting adjustments, which have proved a blessing to religion, ennobling its conceptions and bettering its methods.

And in addition to these points there should



be brought out distinctly a corollary, which is, that science must be studied by its own means and to its own ends, unmixed with the means and unbiased by the motives of investigators in other fields, and uncontrolled by consciences unenlightened by itself.

The very finger of the Almighty seems to have written the proofs of this truth on human history: There has never been a scientific theory framed from the use of Scriptural texts, wholly or partially, which has been made to stand. Such attempts have only subjected their authors to derision, and Christianity to suspicion. From Cosmas finding his plan of the universe in the Jewish tabernacle, to Increase Mather sending mastodon's bones to England as the remains of giants mentioned in Scripture; from Bellarmine declaring that the sun cannot be the centre of the universe, because such an idea 'vitiates the whole Scriptural plan of salvation,' to a recent writer declaring that an evolution theory cannot be true, because St. Paul says that "All flesh is not the same flesh," the result has always





been the same."<sup>1</sup>

White expressed the hope that the greatest and best men of the church--the men standing at centres of thought--would insist with power, more and more, that religion be no longer tied to so injurious a policy as that which this warfare revealed; that searchers after truth, whether in theology or natural science, would work as friends, sure that, no matter how much at variance they may at times seem to be, the truths they reached would finally be fused into each other.

He says, "Let Religion and Science stand together as allies. Let the fight be for truth of every kind against falsehood of every kind; for the living kernel of religion rather than the dead and dried husks of sect and dogma, and the result when fully thought out, will serve and strengthen religion not less than science."<sup>2</sup>

What a difference between this sentiment, and that expressed by some leading theologians immediately after the publication of Darwin's "Origin of Species," and "The Descent of Man!" What an improvement in the relation between evolution and theology

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<sup>1</sup> White's Warfare of Science. p.p. 145. 146.

<sup>2</sup> White's Warfare of Science. p. 149. 151.



since those stormy days.

Dr. James McCosh, immediately after he became President of Princeton University, expressed himself as being in favor of evolution properly limited and explained.<sup>1</sup>

He saw that the most dangerous thing which could be done to Christianity at Princeton was to reiterate in the university pulpit, week after week, solemn declarations that if evolution by natural selection, or indeed evolution at all, be true, the Scriptures are false. He saw that this was the certain way to make the students unbelievers. He therefore not only checked this dangerous preaching but preached an opposite doctrine. He carried the day in neutralizing the teachings of his predecessors and colleagues--so dangerous to all that is essential in Christianity. He pointed out that there was nothing atheistic in the Darwinian theory if properly understood--that is, in the acknowledged tenet of the government of organic nature by means and according to law. He tried to separate the truth from the error in the common expositions of

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Religious Aspects of Evolution. McCosh. New York 1890. Page 9 of Preface.



evolution.

In his book, "The Religious Aspect of Evolution," McCosh's argument is clearly set forth. He points out that, "Naturalists are sure that they see evolution in nature, but they are assured by their teachers or the religious press that if evolution does everything, there is nothing left for God to do, and they see no proof of his existence. Many a youth is brought to a crisis in his belief and life and feels that he must give up either his science or his faith. The question at issue he further states is often wrongly stated. Some say the question is, whether the origin of species and descent of living creatures are by supernatural power or natural law, by Creator or creative action, by design or by mechanism, by contrivance or by chance, by purpose or without purpose.

Darwin and Romanes, and others drew the distinction in this form: between "natural selection" and "supernatural design," between "natural law" and "special creation." The difference between the two opposing theories when thus put is misleading





whether put by disbelief or belief. The supernatural power is to be recognized in the natural law. The Creator's power is executed by creative action. The design is seen in the mechanism. Chance is obliged to vanish because we see contrivance. There is purpose when we see a beneficent end accomplished. Supernatural design produces natural selection. The question is not between God and not God, but between God working without means and by means, the means being created by God and working for him. There is nothing atheistic in the creed that God proceeds by instruments, which we may find to be for the good of his creatures. We should discover God in the human frame, on the supposition that he created it at once, but we have quite as satisfactory evidence on the supposition that he produced it by a father and mother, and provided that it should grow to maturity by a natural process. Plants and animals undergo a series of changes. There may be several special agents as causes of variations. Darwin gives prominence to that of "natural selection." This is not a very happy phrase as it is apt to leave the



impression that there is choice on the part of nature, whereas it is all produced by the arrangements made by the Creator. The principle of the survival of the fittest is a beneficent provision, and it preserves the strong and the useful, while the weak is allowed to die out and leave room for something else to take its place. Religion should not object if at certain junctures it produces a newer and higher species of plant or animal to make up, it may be for the disappearance of an old species, say of a mammal instead of a reptile."<sup>1</sup>

In his chapter on "Powers Modifying Evolution," pages 47-57, McCosh points out that causation cannot give what it has not within itself. There is nothing in the effect which was not potentially in the cause; that is, in the agents which constitute the cause. There is no proof that sensation or intelligence or morality were in the atoms, or in the mechanical or chemical powers. There is a point of time at which they appear. The powers once introduced continue ever afterwards to act. Their appearance from whatever cause they sprung,

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<sup>1</sup> Religious Aspect of Evolution. McCosh. pp. 6--16.



constitutes an epoch. Their action is not inconsistent with the great geological changes but is coincident with them, and operates in producing them. Whence came they? How came they? No mundane power can produce them at first, and it is reasonable that we should refer their production to God, to whom all powers belong, even the power of evolution. Evolution is not adverse to Religion. It is the method by which God works.

God did not set the machine moving and then sit back and apart to see it go. He is still in His works which not only were created by Him, but have no power without His indwelling. Evolution is a method not at all unworthy of God. It is suited to man's nature and it accomplishes some good ends. It does not undermine the argument from Final Cause, but rather strengthens it by furnishing new illustrations of the wisdom and goodness of God. Even Huxley admits that the theory of Evolution does not undermine or interfere in any way with the ordinary doctrine of Final Cause.

He says, "The time has now come when people





must judge of a supposed scientific theory, not from the faith or unbelief of the discoverer, but from the evidence in its behalf. They will find that whatever is true is also good, and will in the end<sup>1</sup> be favorable to religion."

The work of Dr. McCosh helped to adjust the differences between Evolution and Theology ascribing to God His former power and majesty as Creator of all things, but with added wisdom and goodness and more worthy than ever of adoration and praise; at the same time taking nothing from the real essence of the theory of evolution but rather confirming the achievements and the spirit of scientific investigation.

Perhaps few men have done more than James Ward, the celebrated English educator and philosophical writer, to free the doctrine of evolution from fallacies and misconceptions and to defend the Scriptural doctrine of God as the all sufficient, intelligent, creative, power maintaining and governing the universe, and to show that there is no necessary incompatibility between the two.

Since the demurrer of modern science fore-

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<sup>1</sup> McCosh's Religious Aspects of Evolution. p. 59.

The first of these is the fact that the  
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 complex one, and it is not possible to  
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closed theistic inquiries on the ground that it has to do with matter and not spirit, and therefore has no need of theistic hypothesis, Ward calls for a discussion of its fundamental positions and proceeds to examine its real principles.

There are three fundamental theories which are held to be primarily concerned in the unity of nature:- the mechanical theory; the theory of evolution and the theory of psychophysical parallelism dealing with the relation of body and mind.

In his work, "Naturalism and Agnosticism" Ward devotes four lectures to the discussion of the mechanical theory under two heads:- (a) Abstract Dynamics and (b) Molecular Mechanics. He points out the fact that abstract dynamics is a mathematical science and therefore does not measure actual bodies.<sup>1</sup> It takes account of no properties, but those expressed by definitions. But by definitions a body is endowed with no essential properties but mass and mobility. Force cannot be an inherent and permanent property of any given body dynamically considered. Mass though infinite has no force by



itself. Force is but the name for mass-acceleration,  
 i. e. for either side of the dynamical transaction<sup>1</sup>  
 between two bodies, in dynamical relation.

The mechanical theory does not explain phenomena by means of natural forces, but merely describes in the simplest manner the motions that occur in nature. In abstract dynamics we have only an instrument<sup>2</sup> for approximate description.

For mathematical computation, bodies may be regarded as independent, and apart, but experience compels us to admit the thorough-going interdependence of all bodies. We see that on the one hand the mechanical theory has a body of a complexity of relations, and on the other a pure mathematical creation, therefore as a theory it is divided against itself for it must hold true to the one or the other.<sup>3</sup>

The general hypothesis of molecular physics is that all the qualitative variety of the external world can be resolved into quantitative relations of time, space and mass, that is of mass and motion.<sup>4</sup>  
 Abstract mechanics has to renounce the higher cate-

1 Ward's Naturalism and Agnosticism London 1899 Vol. I. pp.60-61.

2 Ward's Naturalism and Agnosticism Vol. I. pp. 65-66.

3 Ward's Naturalism and Agnosticism Vol. I. p. 80.

4 Ward's Naturalism and Agnosticism Vol. I. p. 84.





gories of causality and substantiality which brings  
 us into touch with concrete things.<sup>1</sup> The logical  
 development of the aim of molar and molecular me-  
 chanics which is the simplest and most comprehen-  
 sive description of the movements actual or supposed  
 that occur in nature, is that we find the unveiling  
 of the mystery of matter or the knowledge of the  
 cause of things, but nothing definite but movement.  
 This science does not and cannot yield any direct  
 knowledge concerning real things.<sup>2</sup>

The mechanical theory of the universe, then  
 begins with phenomenal movement and ends by resolv-  
 ing all phenomena into motion. It begins with real  
 bodies in empty space, and ends with ideal motions  
 in an imperceptible plenum. It begins with the  
 dynamics of the ordinary masses, and ends with a  
 medium that needs no dynamics or has a dynamic of  
 its own. But between the beginning and the end  
 there are stages innumerable. The end is an unat-  
 tainable ideal. Descriptive analogies have been  
 regarded as actual facts; yet are nothing but the  
 inevitable outcome of the endeavor to summarize

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Ward's Naturalism and Agnosticism Vol. I. p. 91.

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Ward's Naturalism and Agnosticism Vol. I. p. 140.

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phenomena in terms of motion.

The hopelessness of the mechanical principles to explain adequately actual phenomena has led to a search for a new principle that would bring all physical phenomena, mechanical, as well as the rest, under a single scheme. It is claimed that energy is the true integral law of the world, so we have Energetics replacing Mechanical Physics. The new doctrine of energetics is that all change is either a transformation or a transference of energy; and kinetic energy is only one form of actual energy. <sup>2</sup>

This doctrine only entitles the physicist to assert the quantitative equivalence of phenomena that are qualitatively diverse; so much energy in the form of heat is equivalent to so much energy in the form of mechanical work; or again so much thermal or mechanical energy has its equivalent in radiant energy or in energy of electric field. But it is going beyond facts to assume that all these forms are at bottom the same, i. e. mechanical or kinetic. The endeavor to reduce them to one is <sup>3</sup> pure hypothesis.

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<sup>1</sup> Ward's Naturalism and Agnosticism. Vol. I. pp. 153-154.

<sup>2</sup> Ward's Naturalism and Agnosticism. Vol. I. p. 163.

<sup>3</sup> Ward's Naturalism and Agnosticism. Vol. I. p. 167.



The assumption that the amount of energy in the universe is finite is unwarranted. As a formal principle the conservation of energy may mean much; really it means very little and furnishes no basis for statements concerning the past, present, or the future of the universe as a whole.<sup>1</sup>

The scientific meaning of the statement, "The energy of the universe is constant," is not what at first thought, it seems to be. It looks like a statement of fact but it is really only a postulate or an assumption. We assume that our standard is fixed, for material purposes, that if there is any variation it is a uniform variation throughout the universe. This is all that constancy means.<sup>2</sup>

The principle is only a postulate and not a fundamental principle. But the principle of causality is a real principle. The conservation of energy, even though a real principle, only renders quantitative relations of physical processes intelligible.<sup>3</sup>

So far then mechanism does not explain phenomena but only describes in the simplest manner

1 Ward's Naturalism and Agnosticism Vol. I. p. 170.

2 Ward's Naturalism and Agnosticism Vol. I. p. 173.

3 Ward's Naturalism and Agnosticism Vol. I. p. 175.  
176.

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DIVISION OF THE PHYSICAL SCIENCES  
DEPARTMENT OF CHEMISTRY

RECEIVED  
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FROM  
DR. J. H. GOLDSTEIN

TO  
DR. J. H. GOLDSTEIN

RE: [illegible]

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the motions that occur in nature. Moreover we have observed nothing inconsistent with the theistic hypothesis.<sup>1</sup>

Mr. Spencer tries to deduce the phenomena of evolution--celestial, organic, social, etc., from the principle of the conservation of energy. His familiar definition of Evolution causes Ward to ask, "How does the process begin starting with the universe in a diffused imperceptible state? He says, "If the 'indefinite incoherent homogeneity' in which, according to Mr. Spencer, some rearrangement must result, be a state devoid of all qualitative diversity and without assignable bounds, then any rearrangement can result only from external interference; it cannot begin from within. The production of the atom from a perfect fluid necessitates the interference of the Great Final Cause. Here is an act of creation and not of development. Thus, the very first step in Spencer's Evolution seems to necessitate a breach in continuity. The whole vast problem of molecular development is lost in the haziness of the nebular theory; and is slurred

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over by the vagueness of such terms as, 'indefinite incoherent homogeneity.' Mr. Spencer's plastic terminology will not save his theory. There must<sup>1</sup> be guidance and interference in the process."

In Lecture X Ward shows that the teleological factor is operative and essential throughout all biological evolution. Natural selection without this is not adequate to account for biological evolution. Unless the cosmos itself is to be regarded as a finite and fortuitous variation persisting in an illimitable chaos, we must refer its orderli-<sup>2</sup>ness and meaning to an indwelling Life and Mind.

Naturalism which subordinates the psychical to the physical must explain all on that basis or fail entirely. But it does not and cannot do so. Instead of the physical world being primary and fundamental and the mental world secondary and episodic, as it supposes, the precise opposite is implicit in its own very structure. The thing known, material performance, mechanical necessity, natural law, will not account for the knower.

Epistemological inquiries completely reverse the situation which naturalism simply takes for

<sup>1</sup> Ward's Naturalism and Agnosticism. Vol. I. p. 223.

<sup>2</sup> Ward's Naturalism and Agnosticism. Vol. I. p. 302.

The first part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The second part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The third part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The fourth part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The fifth part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The sixth part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The seventh part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The eighth part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The ninth part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself. The tenth part of the paper discusses the importance of the study of the history of the English language. It is argued that a knowledge of the history of the language is essential for a full understanding of the language itself.

granted. Mind is not the impotent shadow of nature as thus shaped forth, but this shaping itself is the work of mind. Naturalism and Agnosticism in spite of themselves lead to a world of spiritualistic monism. Their demurrer to theistic inquiries is not sustained. The only place where we can get rid of the duality of thought and thing is in the Infinite where the thing is the thought energized.

It can be easily seen that Ward helped to put an end to the conflict between Science and Religion, for he convinced the thinking mind that Science can go on in its great work, so beneficent to the life of humanity, without encroaching on the fields of Philosophy and Religion; while the Theologian may still live on welcoming truth wherever and however revealed, worshiping the Eternal all-sufficient purposive, self-determining Intelligence who works by the evolutionary method in the phenomenal world, and makes known his thoughts to human intelligence.

Evolution instead of being incompatible with theology is in not only in harmony with a rational scientific interpretation of Scripture, but adds new





lustre to the power and glory and wisdom of the God of Scripture.

With a mind keen to detect fallacies and misconceptions, and with rare ability and aptness to separate truth from error and an honesty that recognized and welcomed new light from whatever source it might come, Prof. Borden P. Bowne did much to clear the mind of his day of the confusion and error and false implications connected with the scientific doctrine of evolution, and to give to Scripture a broader, higher, more rational and scientific interpretation than that set forth by the old school theologians.

Prof. Bowne says, "The popular notion of nature, we have said again and again is a confused compound of phenomenal law, crude metaphysics, and misunderstood epistemological postulates. Their confusion finds illustration in the current doctrine of evolution.

Evolution may be either a cosmic formula or a biological doctrine. As a cosmic formula evolution may have two distinct meanings. It may be a de-



scription of the genesis and history of the facts to which it is applied, and it may be such a description, plus a theory of their causes. These two conceptions are seldom distinguished; and it is their confusion, or conglomeration, which makes evolution so immensely significant, on the one hand, and such a bugbear on the other. The formula of evolution as a description of the phenomenal order is familiar to every reader. In this sense evolution is simply a description of an order of development, a statement of what, granting the theory, an observer might have seen if he had been able to inspect the cosmic movement from its simplest stages until now. It is a statement of method and is silent about causation; and the method itself is compatible with any kind of causation. One might hold to this phenomenal order and be an agnostic, or a positivist, or an idealist, or a theologian, as to the causation. Evolution, then, is neither a controlling law nor a producing cause, but simply a description of a phenomenal order. This is evolution in its scientific sense. It is plain that there might be entire unanimity concerning evolution in this sense along



with complete disharmony in its metaphysical interpretation. In such cases we have at bottom, not a scientific difference, but a battle of philosophies. The theorists agree on the facts but interpret them by different schemes of metaphysics. This is the reason why some thinkers find in evolution a veritable aid to faith, while others see in it nothing but atheism. Some see in it atheism, owing to the failure to keep the scientific and the metaphysical questions apart, and especially owing to the bad metaphysics by which the facts have commonly been interpreted.

This bad metaphysics has commonly been of the mechanical and materialistic type, and almost invariably it has maintained a doctrine of necessity. Nature has been erected into a self-contained and self-sufficient system; and natural laws have been viewed as self-executing necessities. Under the influence of these crude notions evolution has been declared to maintain natural against supernatural causation, and continuity and uniformity against break and irruption.

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Evolution would never conflict with religion but for a peculiar conception of the natural. In history all alleged supernatural occurrences are to be looked upon either as fictions or as misunderstood natural events, according to the evolutionists. A natural interpretation of all events is insisted upon, and this is held to exclude the supernatural. Thus the natural and the supernatural are set up as mutually exclusive, so that the more we have of the one the less we must have of the other. Evolution as a theory of causative is simply a piece of bad metaphysics produced by bad logic.

In the causal sense nature explains nothing. It is only a rule according to which some power beyond it proceeds. The cause lies beyond the law; this is the supernatural. But this cause is essentially personal and purposive; and the system of law represents only the general form of its free causality. So far as nature as a whole is concerned, the supernatural is the ever-present ground and administrator of the natural. Hence events in general must be said to be at once natural in the

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mode of their occurrence, and supernatural in their causation.

As soon as we eliminate the crude metaphysics of uncritical thought we see that there is no more needless conflict anywhere in speculation than this which sets the natural and supernatural in mutual hostility."<sup>1</sup>

Prof. Bowne says, "It is not surprising that evolution for a time disturbed theistic faith." He then explains by saying, "Uncritical minds tend to confuse a doctrine with a particular mode of conceiving it; and when a new conception is found necessary, they think the doctrine itself gone. Time and further reflection are needed to disengage the essential doctrine from the traditional conception, to see that a new conception may better express the doctrine than the old one, and to adjust oneself to the new way of thinking. All of this found illustration in the case of evolution. It necessitated a new conception of the way in which purpose is realized, and this seemed to be a denial of purpose.

In fact, a purpose moving faithfully and stead-

<sup>1</sup> Bowne's "Metaphysics"--Revised Edition, 1898  
New York pp.271-289.



ily across ages is far more impressive than one which is realized in a day; but uncritical thought only slowly apprehends this fact, and hence much mental uncertainty and distress arose. In addition the doctrine of evolution, as popularly understood, involved a deal of bad logic and metaphysics, and was often viewed by friend and foe alike as a new form of materialism and atheism.

Fortunately the progress of reflective thought has changed all this, and has taken the doctrine out of the region of hysteria and misunderstanding.

In cruder thought the chief source of confusion in this matter was the fallacy of the universal. In reality a species is only a group of more or less similar individuals, and there is nothing apart from them. The transformation of a species could only mean the production of dissimilar individuals along lines of genetic descent, thus forming a new group. The sole and simple fact in such a case would be that the power which produces individuals produces them in such a way that they may be arranged on an ascending scale of growing complexity and heterogeneity. But there would be nothing in such a fact to





identify individuals, or higher and lower forms; it would rather suggest the relativity of our systems of classification. Apart from our logical manipulation, the fact is the individuals and the power that produces them, through the processes of generation, in such a way that they admit of being classed according to an ascending scale. All else is the shadow of our own minds. Metaphysics locates the producing power in the world-ground itself; and epistemology shows that our classifications produce nothing. They make no identities and abolish no differences. To keep this steadily in view would reduce the doctrine in question to a subordinate significance, and would deprive it entirely of those fearful implications which it has for popular thought. In any case evolution does nothing but is only a name for a form of procedure. To make it more is to mistake the order of doing for the agent itself.

It is manifest that theism has no interest in one method or order of production rather than another, provided always the facts are duly regarded. It is

The first part of the paper discusses the importance of the study and the objectives of the research. It then proceeds to a literature review, followed by a description of the methodology used in the study. The results of the study are presented in the next section, followed by a discussion of the findings and their implications. The paper concludes with a summary of the main points and a list of references.

The study was conducted in a laboratory setting, using a series of experiments to measure the effects of the treatment on the response of the subjects. The results of the study are presented in the next section, followed by a discussion of the findings and their implications. The paper concludes with a summary of the main points and a list of references.

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satisfied to maintain divine causality and leave experience to find the method of procedure."<sup>1</sup>

Prof. Bowne's presentation of the subject could not fail to lead to a better understanding of the real strength and weakness of the forces which gathered about the thought of evolution. He helped to bring about a change of view which modified the thought of the evolutionary leaders themselves. He made clear for both evolutionists and theologians that while things move according to laws which Science has discovered, they do not move of themselves apart from God. His purposive intelligence is active in all phenomena, and law is the orderly method by which He works.

As an illustration of the fact that a change of view has taken place, although the credit for such change does not belong entirely to Prof. Bowne or any other one man, it may be noted that John Fiske who wrote "Outlines of Cosmic Philosophy," which was criticised so severely by Prof. Bowne, ended his career by writing defences of theism and immortality. "Through Nature to God" does not present the same view as the chapters on "Cosmic Theism." And Romanes,

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who wrote "Candid Examination of Theism," also criticised by Prof. Bowne, came back to the faith of earlier life, and died not only a theist, but a christian, having seen through the weakness of his own early argument.

Verily the relation between the doctrine of evolution and theology has changed and shows an improvement. Evolutionists and theologians can be no longer enemies but friends and allies, in the search for God's truths which never conflict, though human conceptions of them may, for a time, for lack of knowledge.

Vernon L. Kellogg, professor in Leland Stanford, Jr., University, in his book, "Darwinism To-Day," makes some interesting statements which confirm the position that there is not necessarily any incompatibility between the scientific doctrine of Evolution and Theology.

He says, "It may be stated with full regard to facts that a major part of the current published output of general biological discussions, theoretical treatises, addresses, and brochures dealing with the





great evolutionary problems, is distinctly anti-Darwinian in character. This major part of the public discussion of the status of evolution and its causes, its factors and mechanism, by working biologists and thinking natural philosophers, reveals a lack of belief in the effectiveness or capacity of the natural selection theory to serve as a sufficient cause-mechanical explanation of species-forming and evolution.

It is the German biologists who are most active in this undermining of the Darwinian theories. But there are others with them; Holland, Russia, Italy, France and our own country all contribute their quota of disturbing questions and declarations of protest and revolt.<sup>1</sup>

Speaking of the origin of the millions of kinds of animals and plants he says, "All these can have had an origin in some one of but three ways; they have come with existence spontaneously, they have been specially created by some supernatural power, or they have descended one from the other in many-branching series by gradual transformation. There

1 Pellogg's "Darwinism To-Day" p. 4. New York 1908.



is absolutely no scientific evidence for either of the first two ways; there is much scientific evidence for the last way. There is left for the scientific man, then, solely the last; that is the method of descent.

The theory of descent (with which phrase organic evolution may be practically held as a synonym) is, then, simply the declaration that the various living as well as the now extinct species of organisms are descended from one another and from common ancestors. It is the explanation of the origin of species accepted in the science of biology. The theory of descent explains the origin of kinds of life, not the origin of life. Darwinism may be defined, as a certain rational, causo-mechanical (hence, non-teleologic) explanation of the origin of new species. Even in the formulation of the true Darwinism, the selection theories, there must also be recognized the participation of other minds than that of Darwin.<sup>1</sup>"

According to Kellogg, the theory of descent or evolution as a principle seems to be scientifically

<sup>1</sup> Kellogg's Darwinism To-Day. pp. 10-13.



established, but Darwinism, the essential idea of which is a rigorous automatic Natural Selection, when offered as an explanation of descent stands to-day seriously discredited in the biological world.<sup>1</sup>

The theory of natural selection has nothing to do with the origin of species, but with the survival of already formed species. Not selection of the fittest individuals, but the survival of the sufficiently fit species. New species are not made by Darwinian methods; they are born. The primary problem is the 'origin of species.' The control idea is not what species survive, but how species originate; no matter whether they are going to become victorious or not.<sup>2</sup>

Nägeli's automatic perfecting principle is an impossibility to the thorough-going evolutionist seeking for a causo-mechanical explanation of change. But an automatic modifying principle which results in determinate or purposive change, that is, in the change needed as the indispensable basis for the up-building of the great fabric of species diversity and descent; is not that the very thing provided by the simple physical or mechanical impossibility

1 Kellogg's Darwinism To-Day. pp. 374-375.

2 Kellogg's Darwinism To-Day. pp. 95-96.

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of perfect identity between process and environment in the case of one individual and process and environment in the case of any other? It seems so to me,<sup>1</sup> says Kellogg.

Theology has no quarrel then with evolution as a method, for the automatic modifying principle-- which results in determinate or purposive change, and which evolutionists who seek for a causo-mechanical explanation of change feel the need of but cannot find, and which theologians also feel the need of and do find in the self-conscious, self-determining world-ground--that power can work out his purposes in nature as well by the method of evolution, as by direct fiat.

Theology would not limit God as to method. The scientific doctrine of evolution, eliminated from the scientifically unproven theories connected with it, is certainly not incompatible with theology to-day. Half a century ago it was otherwise, as has been clearly shown in this dissertation.

It is evident then that the relation between the scientific doctrine of Evolution and Theology

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<sup>1</sup> Kellogg's Darwinism To-Day. p. 387.



has improved in the last fifty years, and both have come out of the struggle stronger for having met a supposed enemy face to face, and each is better prepared to strengthen and serve the other.

In answer to a direct question regarding the subject here discussed Dr. M. S. Terry of Garrett Biblical Institute said in a personal letter, "I have simply to say that the scientific doctrine of evolution, in its essential teaching and outline, so far as I comprehend it, is in very thorough harmony with the Theology of the Old and New Testaments. I regard certain fundamental facts and truths of the theory of evolution as beyond all reasonable question, and quite essential to the true deep, rich and full understanding of both the Jewish and the Christian Revelation as embodied in the Holy Scriptures."

Dr. Carl Jordan, professor of Systematic Theology in German Wallace and Nast Theological Seminary, Berea, Ohio, wrote me as follows: "I consider materialistic evolution as entirely out of the question. Without the personal, Almighty God no change of species is possible. Logic forbids it. So far



the relation between evolution and theology is more favorable.

My own opinion is, that with all the changes that have been made in the doctrine of evolution since Darwin, there has yet to be brought forward the first fact of actual proof. The doctrine is simply a belief of some people; but no real evidence has as yet been observed. The first time a higher species is evolved from a lower, a miracle is scientifically proven. But nothing of that kind has as yet been observed. The proof which has been offered, as that of the pedigree of the horse, is almost too childish to mention it. The first starting point to real knowledge must always be the immediate experience of human consciousness. This proves the world to be the work of an intelligent cause. Now, this cause might have brought the various species of living beings into existence by a process of evolution. And if the proof were found, there would be nothing in Christianity to oppose the doctrine. But as this proof is not forthcoming, it is more rational to believe, that the one creator first made different types of beings of which the various





individuals are the expression. There is then, evolution within those types or species, but evidently none beyond.

Dr. Charles H. Sheldon of Boston University, School of Theology, in a letter to me, expressed himself on the subject by saying, "The scientific doctrine of evolution, taken in its proper character, without mixture with faulty metaphysics, is perfectly compatible with a theology which ought to satisfy any reasonable evangelical christian. This truth, I think, is more clearly and generally recognized at present than it was fifty years ago."

W. Douglas Mackenzie of Hartford Theological Seminary says, "It would take a long letter to answer your inquiry. There are as many scientific doctrines of evolution bearing upon theology as there are groups of religious men among men of science. The men of science who are religious hold, of course, a doctrine of evolution compatible therewith. Those who are not religious expound a doctrine of evolution which is naturalistic and impossible to reconcile with faith in a personal God."



William Fairfield Warren, Professor of Religions and Religion of Boston University School of Theology in a letter to me says, "Not infrequently one has need of a term which shall clearly designate an orderly series of changes in something subject to change without in any degree prejudging the question as to the cause, or as to the purpose, of such series. To meet this need, the term evolution is so convenient and well nigh indispensable, that theologians and philosophers have come to use it quite as freely as do students of natural processes. Among the advantages which have resulted from so doing may be mentioned this: that the term has now very nearly lost the perverted and indefensible connotation given it a generation or two ago by partisans of a pantheistic or hylozoistic philosophy."

Dr. Olin Alfred Curtis, Professor of Systematic Theology in the Drew Theological Seminary, in his book, "The Christian Faith," teaches that evolution as a phenomenal process has no bearing upon the christian faith one way or the other. As a causal process evolution is insufficient to explain phenomena. He says, "The question of man's parentage,



while important in certain lines of discussion, is not so crucial as is usually, and on both sides, taken for granted. Establish, say a tarsiid parentage for primeval man, and what would it amount to as a bearing upon any profound defense of the Christian faith? Nothing one way or the other. The connection between parents and offspring would be superficial--phenomenal--and the demand for an adequate cause would be precisely as urgent as it was before. Neither would this phenomenal connection require us to modify the fundamental Christian conception of man's nature, condition and destiny." <sup>1</sup>

"On the one hand, the system of nature is not a deistic machine, wound up once for all to perform its own set task. And, on the other hand, it is not a pantheistic organism, forever self-sufficient for its own necessary process. It needs God, the immanent and yet transcendent God. In every point and in every movement nature needs the Absolute Will. Outside of one very limited realm, which requires no emphasis here, there is no causation other than that of this Divine Will. Forces, laws, processes, evolutions--they all but express the personal power and manners of the Lord God Almighty." <sup>2</sup>

1 The Christian Faith. Curtis p. 11.

2 Op. cit. p. 12.





## Chapter V.

### The Recent Attitude of Roman Catholic Theology to The Doctrine of Evolution.

The movement in the Roman Catholic Church known as Modernism which has attracted not only the attention of the Pope but practically the whole Christian world, is so revolutionary with respect to the traditional dogmas of that church that one who is looking on is led to inquire whether the attitude of the church toward evolution is to be determined by the utterances of the Modernists or by the dictum of the Pope.

A prominent New England clergyman of the Roman Catholic Church told me recently that the modernist movement was not now wide spread, indeed, that it had been practically killed by the Encyclical of Pius X. A prominent Protestant clergyman who has been making a study of Modernism, expressed himself as believing that the Modernists are still very active and represent such a strong element in the Roman Catholic Church that it may be said that the real



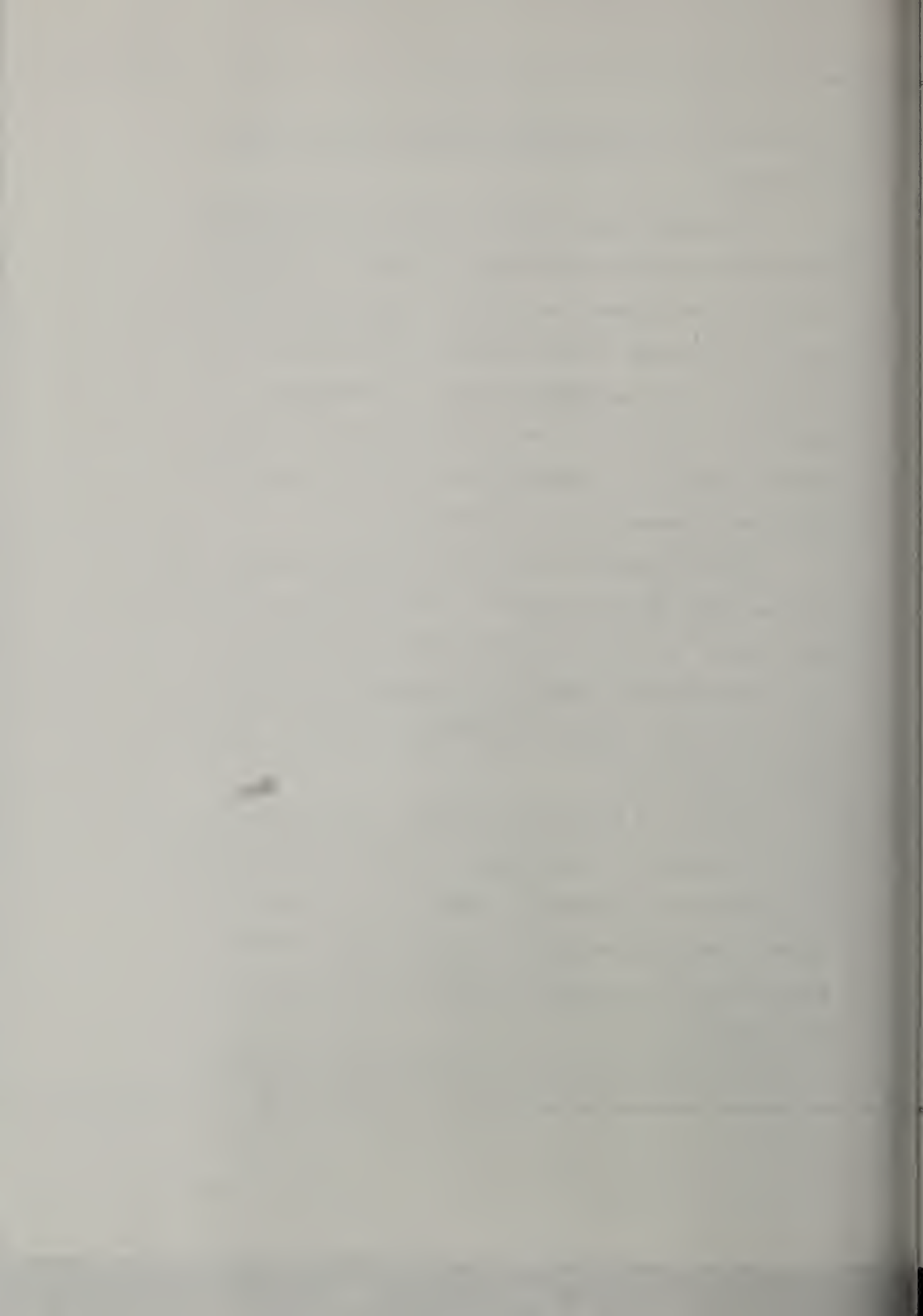
attitude of the church may be determined by their positions.

It seems to me, that no matter how prevalent modernism may be in the church, the real attitude of the church toward evolution or any other doctrine, must be regarded as that which is the official expression of its authorized head or government. To organized authority, then, we must look for information, while not ignoring the fact that there may be other sources rich in interest.

Perhaps there is no work of higher authority in the Roman Catholic church than the "Catholic Encyclopedia," an international work of reference on the constitution, doctrine, discipline, and history of the Catholic Church, published in 1909 by Appleton Co. New York.

In Vol. V there is an article on Evolution by E. Wasmann, of Luxemburg, in which he sets forth the attitude of Catholics toward the theory. He gives a thorough exposition in his book, "Modern Biology and the Theory of Evolution". (Freiburg im Br., 1904).

He says that it is of the utmost importance



to every educated Catholic to-day to know whether the theory of evolution is to be rejected as unfounded and inimical to Christianity, or to be accepted as an established theory altogether compatible with the principles of a christian conception of the universe. In order to give a clear and correct answer to the question he says, it is necessary to distinguish (1) between the theory of evolution as a scientific hypothesis and as a philosophical speculation; (2) between the theory of evolution as based on theistic principles and as based on a materialistic and atheistic foundation; (3) between the theory of evolution and Darwinism; (4) between the theory of evolution as applied to the vegetable and animal kingdoms and as applied to man.

(1) As a scientific hypothesis the theory of evolution seeks to determine the historical succession of the various species of plants and of animals on our earth; and to show how in the course of the different geological epochs they gradually evolve from their beginnings by purely natural causes of specific development. The theory of evolution, then,





as a scientific hypothesis, does not consider the present species of plants and of animals as forms directly created by God, but as the final result of an evolution from other species existing in former geological periods. Hence it is called, "the theory of evolution," or "the theory of descent," since it implies the descent of the present from extinct species. This theory is opposed to the theory of constancy which assumes the immutability of organic species. The scientific theory of evolution, therefore, does not concern itself with the origin of life. It merely inquires into the genetic relations of systematic species, genera, and families, and endeavors to arrange them according to natural series of descent (genetic trees).

It is understood that the theory is only a hypothesis. There is no evidence whatever for the common genetic descent of all plants and animals from a single primitive organism. Hence the greater number of botanists and zöologists regard a polygenetic evolution as much more acceptable than a monogenetic. At present, however, it is impossible to

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decide how many independent genetic series must be assumed in the animal and vegetable kingdoms. This is the gist of the theory of evolution as a scientific hypothesis.

It is in perfect agreement with the Christian conception of the universe; for Scripture does not tell us in what form the present species of plants and of animals were originally created by God. As early as 1877 Knabenbauer stated "that there is no objection, so far as faith is concerned, to assuming the descent of all plants and animal species from a few types" (Stimmen aus Maria Laach, XIII, p. 72).

The theory of evolution as a philosophical conception considers the entire history of the cosmos as an harmonious development, brought about by natural laws. This conception is in agreement with the christian view of the universe. God is the creator of heaven and earth. If God produces the universe by a single creative act of His will, then its natural development by laws implanted in it by the Creator is to the greater glory of His Divine power and wisdom. St. Thomas says: "The potency of a cause

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is the greater, the more remote the effects to which it extends;" and Suarez: "God does not interfere directly with the natural order, where secondary causes suffice to produce the intended effect."

In the light of this principle of the Christian interpretation of nature, the history of the animal and vegetable kingdoms on our planet is, as it were, a versicle in a volume of a million pages in which the natural development of the cosmos is described, and upon whose title-page is written: "In the beginning God created heaven and earth."

(2) The theory of evolution just stated rests on a theistic foundation. In contradistinction to this is another theory resting on a materialistic and atheistic basis, the first principle of which is the denial of a personal Creator. This atheistic theory of evolution is ineffectual to account for the first beginning of the cosmos or for the law of its evolution, since it acknowledges neither creator nor lawgiver. Natural science, moreover, has proved that spontaneous generation--i. e. the independent genesis

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of a living being from non-living matter--contradicts the facts of observation. For this reason the theistic theory of evolution postulates an intervention on the part of the Creator in the production of the first organisms. When and how the first seeds of life were implanted in matter, we, indeed, do not know.

The Christian theory of evolution also demands a creative act for the origin of the human soul, since the soul cannot have its origin in matter. The atheistic theory of evolution, on the contrary, rejects the assumption of a soul separate from matter, and thereby sinks into blank materialism.

(3) Darwinism and the theory of evolution are by no means equivalent conceptions. The theory of evolution was propounded before Charles Darwin's time, by Lamarck 1809 and Geoffroy de Saint-Hilaire. Darwin, in 1859, gave it a new form by endeavoring to explain the origin of species by means of natural selection. According to this theory the breeding of new species depends on the survival of the fittest in the struggle for existence. The Darwinian theory



of selection is Darwinism--adhering to the narrower, and accurate sense of the word. As a theory it is scientifically inadequate, since it does not account for the origin of attributes fitted to the purpose, which must be referred back to the interior, original causes of evolution.

Haeckel, with other materialists, has enlarged this selection theory of Darwin's into a philosophical world-idea, by attempting to account for the whole evolution of the cosmos by means of the chance survival of the fittest. This theory is Darwinism in the secondary, and wider, sense of the word. It is that atheistic form of the theory of evolution which was shown above--under (2)--to be untenable.

The third signification of the term Darwinism arose from the application of the theory of selection to man, which is likewise impossible of acceptance.

In the fourth place, Darwinism frequently stands, in popular usage, for the theory of evolution in general. This use of the word rests on an evident confusion of ideas, and must therefore be set aside. (4) To what extent is the theory of evolution applicable to man? --That God should have



made use of natural, evolutionary, original causes in the production of man's body, is per se not improbable, and was propounded by St. Augustine. The actual proofs of the descent of man's body from animals is, however, inadequate, especially in respect to palaeontology. And the human soul could not have been derived through natural evolution from that of the brute, since it is of a spiritual nature; for which reason we must refer its origin to a creative<sup>1</sup> act on the part of God.

The history and scientific foundations of evolution is dealt with at some length, the details of which it is unnecessary to give here, but the general conclusions noted are as follows:-

1. The origin of life is unknown to science.
2. The origin of the main organic types and their principal subdivisions are likewise unknown to science.
3. There is no evidence in favor of an ascending evolution of organic forms.
4. There is no trace of even a merely probable argument in favor of the animal origin of man. The

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<sup>1</sup> The Catholic Encyclopedia. New York 1909. Vol. V. pp. 654. 655





The earliest human fossils and the most ancient traces of culture refer to a *Homo sapiens* as we know him to-day.

5. Most of the so-called systematic species and genera were certainly not created as such, but originated by a process of either gradual or saltatory evolution. Changes which extend beyond the range of variation observed in the human species have thus far not been strictly demonstrated, either experimentally or historically.

6. There is very little known as to the causes of evolution. The greatest difficulty is to explain the origin and constancy of "new" characters and the teleology of the process. Darwin's "natural selection" is a negative factor only. The moulding influence of the environment cannot be doubted; but at present we are unable to ascertain how far that influence may extend. Lamark's "inheritance of acquired characters" is not yet exactly proved, nor is it evident that really new forms can arise by "mutation."<sup>1</sup>

The attitude of Roman Catholic theology to the

<sup>1</sup>  
Op. cit. Vol. V p. 670.



doctrine of evolution as expressed in the foregoing discussion, while manifesting the characteristic conservatism of Roman Catholicism toward scientific theories, is not discordant with the views expressed by the scientists and theologians cited in the previous chapter. It is evident from this article by Wasmann which passed the censorship of the Church, May 1, 1909, under the hand of censor Remy Lafort, that the theory of evolution, as a scientific hypothesis, or as a philosophical conception which considers the entire history of the cosmos as an harmonious development, brought about by natural laws, is in perfect harmony with Roman Catholic theology, which holds to a personal Creator but does not limit Him as to methods of operation.

A few interesting facts connected with the recent disturbance in the Roman Catholic Church on account of the reform movement in that body known as "modernism" may throw some light on the attitude of that church toward any scientific investigation and development that may apparently conflict with a science that is based on theological dogmas.



Men stimulated by the advance of modern thought will think, and will express their thoughts. This mental activity in the Roman Catholic Church gave rise to an infatuation for modern ideas. Abbate Cavallanti calls it a morbid state of conscience among Catholics, and especially Young Catholics, that professes manifold ideals, opinions, and tendencies. From time to time these tendencies work out into systems, that are to renew the basis and superstructure of society, politics, philosophy, theology, of the Church herself and of the Christian religion.<sup>1</sup>

"Il programma dei modernisti," on (page 5, note 1) says, "Our religious attitude is ruled by the single wish to be one with Christians and Catholics who live in harmony with the spirit of the age."

The spirit of this plan of reform has been summarized under the following heads: (a) A spirit of complete emancipation, tending to weaken ecclesiastical authority; the emancipation of science which may traverse every field of investigation without fear of conflict with the Church; the eman-

<sup>1</sup>

The Catholic Encyclopedia. Vol X. New York 1911. pp. 415. 416.





cipator of the State, which should never be hampered by religious authority; the emancipation of the private conscience, whose inspirations must not be overridden by papal definitions or anathemas; the emancipation of the universal conscience, with which the church should be ever in agreement; (b) A spirit of movement and change, with an inclination to a sweeping form of evolution such as abhors anything fixed and stationary.

Such are the fundamental tendencies. As such, they seek to explain, justify, and strengthen themselves in an error, to which therefore one might give the name of "essential" modernism. This error is nothing less than the perversion of dogma. Dogma and supernatural knowledge are correlative terms; one implies the other as the action implies its object.<sup>1</sup>

The errors expressed by these reformers were catalogued, and condemned by the Holy Father July 3rd, 1907, and were later grouped together under the name Modernism. September 8th, in order to explain the reasons underlying this condemnation of Modernism,

<sup>1</sup> Op. Cit. Vol. X. New York 1911. pp. 416.



he gave to the world an Encyclical remarkable for its fullness, clearness and vigor.

Cardinal Mercier in a Lenten Pastoral to his people in Belgium attempts to acquaint them with the papal Encyclical and to explain the motives that led to its condemnation by the supreme authority of the Church.

To this pastoral Father Tyrrell, of London made a reply in 1908. In speaking of the control of science by a revealed theology he says, "Can we say, on looking back over the history of its development, that the control of science by a revealed theology has been a stimulus and not an obstacle? that since it has thrown off that control it has languished? that it has declined steadily from the sixteenth to the twentieth century--more especially in Protestant countries? Can we say that the teachings of the church enforced under all sorts of pains and penalties, temporal and eternal, has notably hastened and facilitated the discovery of truth as to the nature and history of the world and of man? Is it not just in the name of revelation that the whole



authority of the Church over conscience has been brought to bear against one science after another, so as, if possible, to strangle them in their birth? If the church had had her way, if Reason had not refused to listen to her outside the narrow limits of her teaching commission, our scientific conceptions to-day would be those of the Bible. We should believe that the world was flat or concave, and not spherical; or that if spherical, there were no antipodes; that the stars were hung out like lamps night by night; that the sun swept round the earth day by day; that man was created only six thousand years ago; that fossils were created just as and where we find them; that eclipses and meteors were miraculous portents; that the multiplicity of languages was a preternatural phenomenon; that all races derived from the three sons of Noah; that all animal species had existed in one spot and were represented in Noah's ark; that the whole world had been submerged and dried again in a couple of years. We should still be burning old women on the charge of the evil eye or of intercourse with the devil; we should be





treating epilepsy, hysteria, and insanity as diabolic possessions; we should be using prayer and exorcism instead of medicine, surgery and hygiene; we should be ringing consecrated bells against storm-demons and earth-shakers; the chemist would be a magician; the money lender an excommunicate.

The men who first challenged these positions were condemned and energetically opposed in the name of revelation as heretics and blasphemers. They were believers who accepted the current confusion between revelation and theology; who knew nothing of the distinction (forced on them so slowly) between the experimental and the intellectual values of the sacred writings; or who, at most, tried vainly to deny the solidarity of theology with other sciences; and to separate the scientific from the theological teaching of the Bible. And, therefore just because of their belief their conscience was enlisted against their reason and their senses; and their energy was paralyzed by the illusion of an imaginary contradiction between truth and truth, between revelation and science. It was not purely the fear of ecclesiastical tyrants, but also the fear of God and of a per-

The first of these is the fact that the  
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plexed conscience that made men, like Galileo, retract a known truth in deference to what they believed to be a revealed truth. Thus it was that for centuries the scientific efforts of Catholics were checked and frustrated by theology posing as revelation. As soon as that yoke was shaken off, science rushed forward by leaps and bounds. On the part of Protestants there is a change that is largely due to a change of principle on the part of theology. But when we turn to the Encyclical Pascendi, we find the old principle reasserted in its crudest form; we find the scientific and historic infallibility of the Bible affirmed under pain of making God a liar. We are bound down to all the scientific and historic implications of scripture and defined dogma; we are told that science must be ruled by scholastic theology and that such rule is for its benefit and protection. The principle has not changed.

When, therefore, you assure the youth of Belgium that the Encyclical leaves scientific liberty intact, you must be thinking of the natural sciences against which its principles are now simply helpless, and which theology has wisely learned to leave alone.



Do I then mean to admit that the Church is hostile to science or to any human interest? God forbid! I only mean that theologians and ecclesiastics are not the Church; that revelation is not theology; that since there is a relation of solidarity between theology and every other science, the Church in proving herself fallible in science proves herself fallible in theology. Since belief in revealed theology issues in scientific error, that belief is not true. Theology is human; Revelation is Divine. Revelation is a supernaturally imparted experience of realities--an experience that utters itself spontaneously in imaginative popular non-scientific form; theology is natural, tentative, fallible analysis of that experience. The Church's divine commission is to teach and propagate a new life, a new love, a new hope, a new spirit, and not the analysis of these experiences. Her theology is true and helpful just in the measure that it grows out of and ever returns to the collective religious experience of those who live the life and breathe the hope of the Gospel as preached by Jesus Christ."

<sup>1</sup>  
 Medievalism, by Tyrrell. A reply to Cardinal Mercier. London 1908. pp. 124-129.





We see, then, that for centuries the scientific efforts of Catholics were checked and frustrated by Catholic theology posing as revelation. It is clearly pointed out that this theology is simply helpless against the natural sciences and has wisely learned to leave them alone. In the Encyclical letter of Pope Pius X, published Sept. 1907, the study of theology and the study of natural science are urged, but the traditional dogmas of the church are made paramount with characteristic insistence.

He says, "With regard to secular studies let it suffice to recall here what Our Predecessor has admirably said: 'Apply yourselves energetically to the study of natural sciences, in which department the things that have been so brilliantly discovered, and so usefully applied, to the admiration of the present age, will be the object of praise and commendation to those who come after us.' But this is to be done without interfering with sacred studies. For in the vast and varied abundance of studies opening before the mind desirous of truth, it is known to everyone that theology occupies such a commanding



place, that according to an ancient adage of the wise, it is the duty of the other arts and sciences to serve it, and to wait upon it after the manner of handmaidens. We ordain, therefore, that the study of natural sciences in the seminaries be carried out according to law. Anyone who neglects the sacred sciences or appears to prefer the secular to them is to be excluded without compunction from offices in Catholic Universities. In all this question of studies, you cannot be too watchful or too constant.<sup>1</sup>

The Catholic Encyclopedia Vol. V. page 655 refers to Mivart as an authority on evolution and mentions his work, "On the Genesis of Species". (London and New York, 1871).

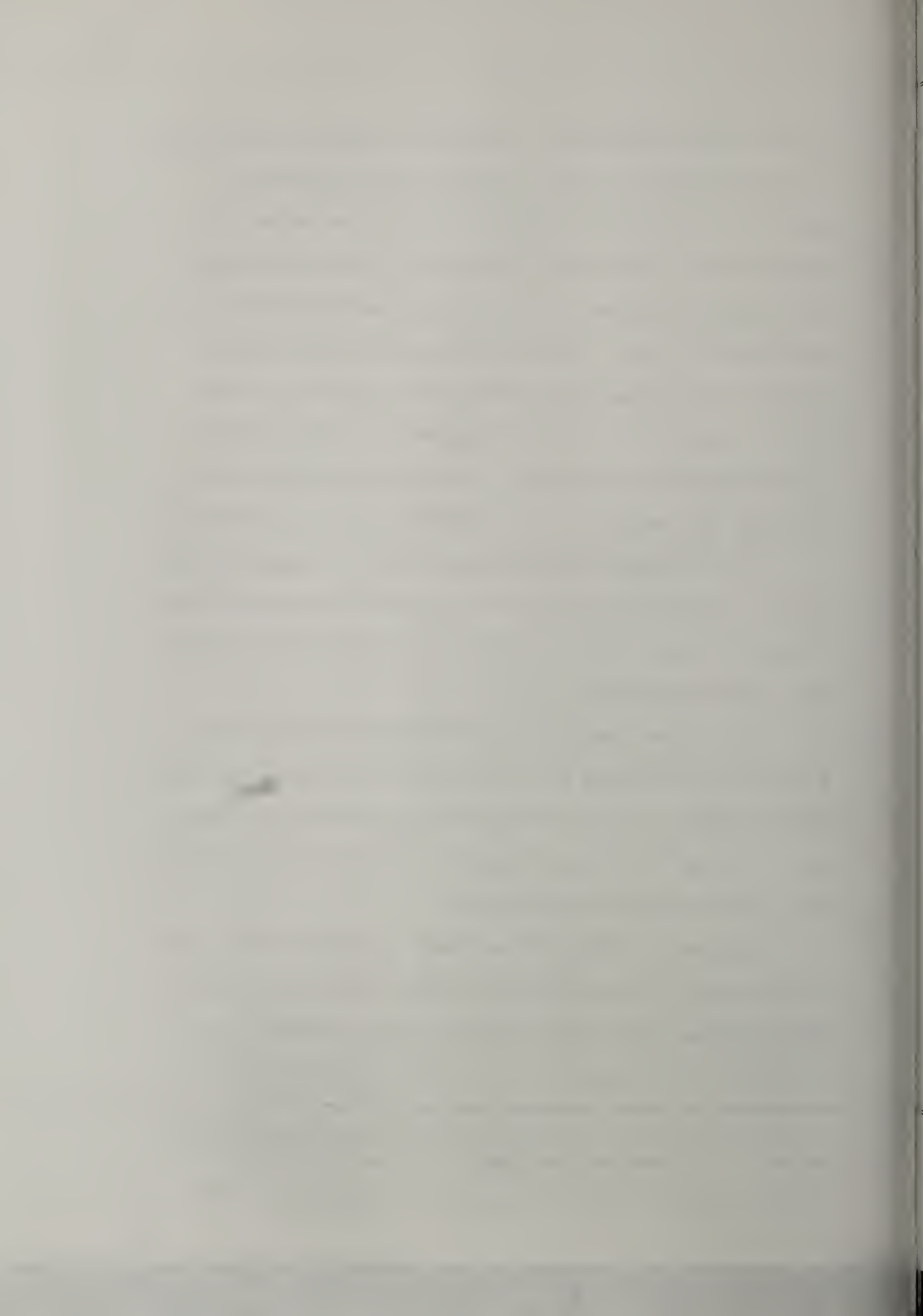
His views regarding the compatibility of evolution and theology are practically the same as those held by most of the authors cited in the last chapter. It may be interesting to state in his own words what was his aim in this book.

He says, "The aim has been to support the doctrine that these species have been evolved by ordinary natural laws (for the most part unknown) controlled by the subordinate action of "Natural Selec-

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<sup>1</sup> The Programme of Modernism, and the Encyclical of Pius X. A translation from the Italian by Rev.

Father Tyrrell. London, 1908. pp. 229-231.



tion," and at the same time to remind some that there is and can be absolutely nothing in physical science which forbids them to regard those natural laws as acting with the Divine concurrence and in obedience to a creative fiat originally imposed on the primeval Cosmos, "in the beginning," by its Creator, its Up-<sup>1</sup>holder, and its Lord."

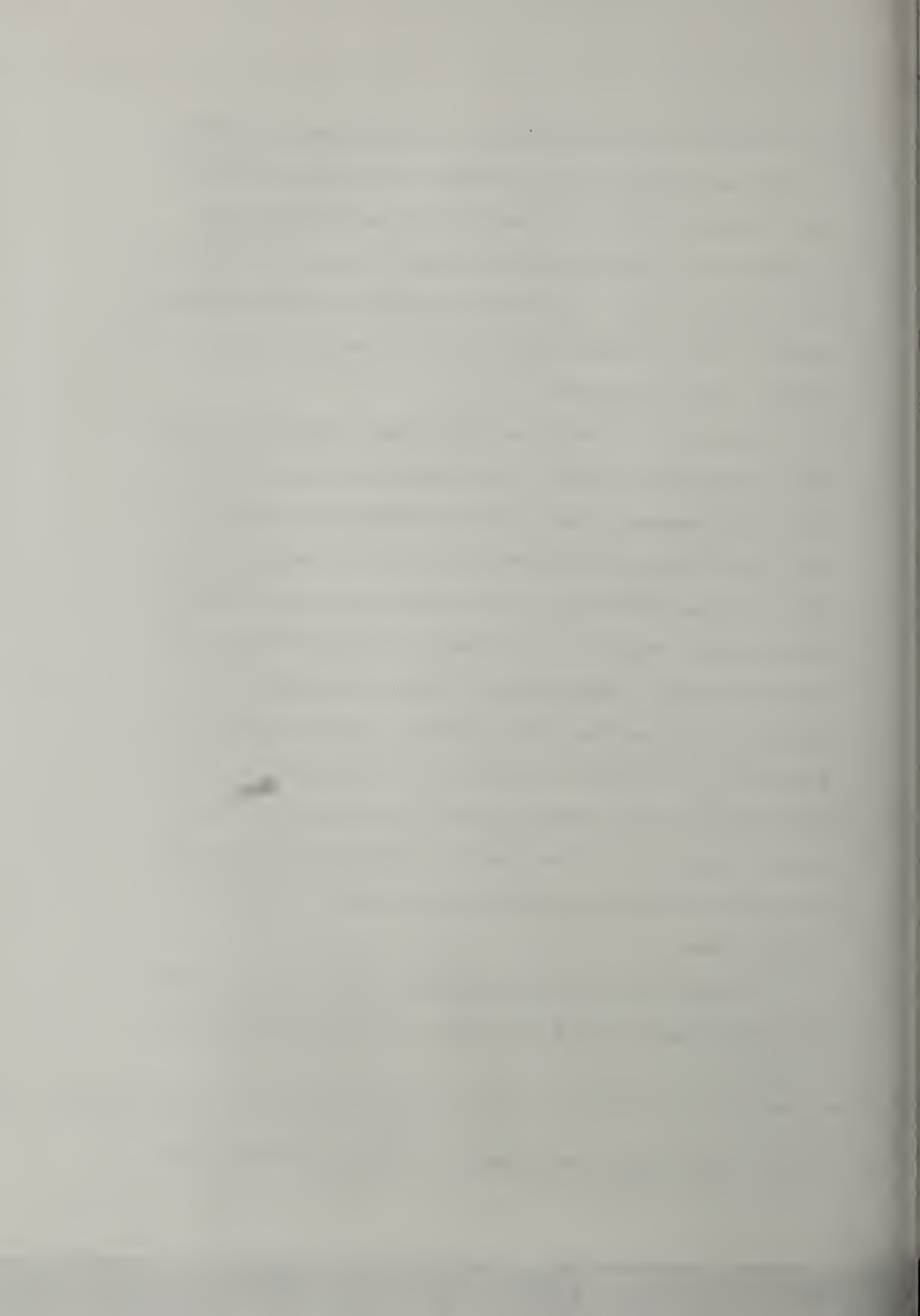
While it is true that the Roman Catholic Church held tenaciously to her traditional dogmas, and was slow to acknowledge many of the scientific truths revealed from time to time by careful investigation and critical reflection, she nevertheless did admit indisputable scientific truths, and adjusted her theology to them. There seems to be no necessary incompatibility between her theology and the scientific doctrine of evolution when freed from materialistic implications; and materialistic evolution has been shown to be out of the question. An intelligent, all sufficient first cause must be posited, or reason breaks down.

Roman Catholic Theology, as well as Protestant Theology, has learned the folly of interference with

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Mivart's "On the Genesis of Species." New York 1871. pp. 306-307.





with science in the supposed interest of religion, and has been compelled to recognize that untrammelled scientific investigation eventually results advantageously to both religion and science.

The conflict between theologians and evolutionists, resulting largely from preconceived notions, bad metaphysics, false logic and ignorance, has passed into history, and a friendly meeting place has been found on the field of truth. Science and Theology have come out of the struggle stronger for having met a supposed enemy face to face, and each is better prepared to help and serve the other.



## Chapter VI.

## Results of the Conflict Between Evolution and Theology.

In this dissertation the subject under discussion has been clearly stated; attention has been directed to the status of Evolution and Theology about the middle of the last century; the bearing, on orthodox theology, of new theories resulting from investigations in the field of natural science has been noted; the conflict between the defenders of the traditional view and the advocates of the new theories has been sufficiently described to show that the combatants then thought there was a real incompatibility between the two views, that if one was true the other must be false; it has been shown that the efforts to free the doctrine of evolution from some erroneous implications, and theology from some of its unwarranted assumptions, and to arrive at the truth have not been in vain; and even the Roman Catholic Church, notwithstanding her characteristic tenacity of her traditional dogmas, has been shown to hold that the scientific doctrine of evolution is



is not inconsistent with the Christian conception of the universe. It remains for us, in this chapter, to point out briefly some of the results of the conflict, and leave the subject with the conscious possession and enjoyment of the fact, that the present relation between the scientific doctrine of evolution and theology is an improvement on that existing between the two, fifty years ago.

Religion still prevails and Science cannot be ignored. It was in vain that Theology tried to enslave Science. Scientists have come to recognize the limitations of science and her legitimate field. Science has demonstrated its right to be. The scientific spirit is itself subject to evolution and considers every explanation as necessarily relative. One demand of the human mind is an explanation of the origin and nature of things and the meaning of our total experience. Neither science alone or religion alone can satisfy man's heart as well as his intellect. Both are necessary; and as long as the needs of man cannot be satisfied without them they will reappear as essential factors in human life.





Religion and Science are equally given in experience. They have one and the same origin:- both are generated in the human mind, by reason of its relation to the world; they are to the same extent realities, spontaneous manifestations of nature. It is therefore nonsense to inquire if the existence of the one is compatible with that of the other. They are able to co-exist seeing they do exist. The important consideration is not, seeking which of the two should be annihilated, but seeking the reason and meaning of their co-existence.

Man must be allowed to consider the conditions not only of scientific knowledge, but of his own life. The reality and value of the individual must be considered. The soul must indubitably trust in the reality of its own experiences. It can do no other. They are given data calling for interpretation as much as any other phenomena of life. They are as real as our perception of the outer world of sense, as our consciousness of our individual existence. Prof. Wm. James, in his "Varieties of Religious Experience," vindicated this fact, that the re-



ligious consciousness cannot be dismissed as merely pathological. The religious sense is as real as any other sense.

Just as all Natural Science is but the analysis of our common sensible experiences and the inferences that can be drawn from such analysis, so Theology is but the reasoned statement of all the implications of the religious or spiritual experiences of human kind. No one doubts the objective validity of the formulae of Science. And while theological research has given us no such universally accepted results as science, it is a matter for which the theologian has to be thankful that the tendency of the present time is to admit that he has a standing in the scientific world. The modern mind cannot but think that religious experiences must have their laws and explanations just as have other observable phenomena. The search is to be made for a true scientific basis of religious phenomena and for some law in accordance with which religious experiences must occur. The scientific mind inclines to the probability, that religious phenomena will be found to have their ex-



planation in the discovery of the operation of some great general laws upon some part of man's nature; that the great Power which ordereth all things works along definite lines.

It is more and more realized that Reality is spiritual rather than material; that the Force behind nature is not an 'Unknowable' we can safely leave out of our calculations, but genuine Being, in some sense Personal who has a real correspondence with our intuitive moral instincts.

Fifty years ago most scientists were thought to be absolute materialists--atheists. Then the mind no longer denied, but admitted ignorance, and "agnostic" was the word. One great cause of confusion and conflict was the fact that the scientific method though prevalent was not applied to religious phenomena, and so the age got ahead of theology, and mere dogmatic statements were no longer accepted by scientific minds. The appeal to authority--"Because it is written"--failed to grip them. The Eternal Consciousness sees to it that conscience never fails, and it was still safe to appeal to conscience.





Now the problem is no longer a matter of mere dogmas, but the explanation of the phenomena which presents itself. The scientific method came to be applied to all phenomena, and the search now is not for reasons merely, but for explanations. When a man turns away from his wickedness and does that which is lawful and right, what has happened? Science shows the law of Religious Psychology; and God is the only explanation of it.

Half a century ago Science stood for absolute knowledge of the nature of things. She laid claim to definite knowledge in contrast with variable and individual belief, and emboldened by the conquests gained through the discovery of her true principles, she saw no limit to her range and power, and usurped the field of Philosophy; but her philosophy based on the impersonal mechanical plane, when put to the test by impartial master minds, led into all sorts of confusion and difficulty and was unable to explain phenomena and life.

To-day the outlook is different. Science has more and more rid herself of everything connected

the polymerization of acrylonitrile in the presence of a small amount of styrene.

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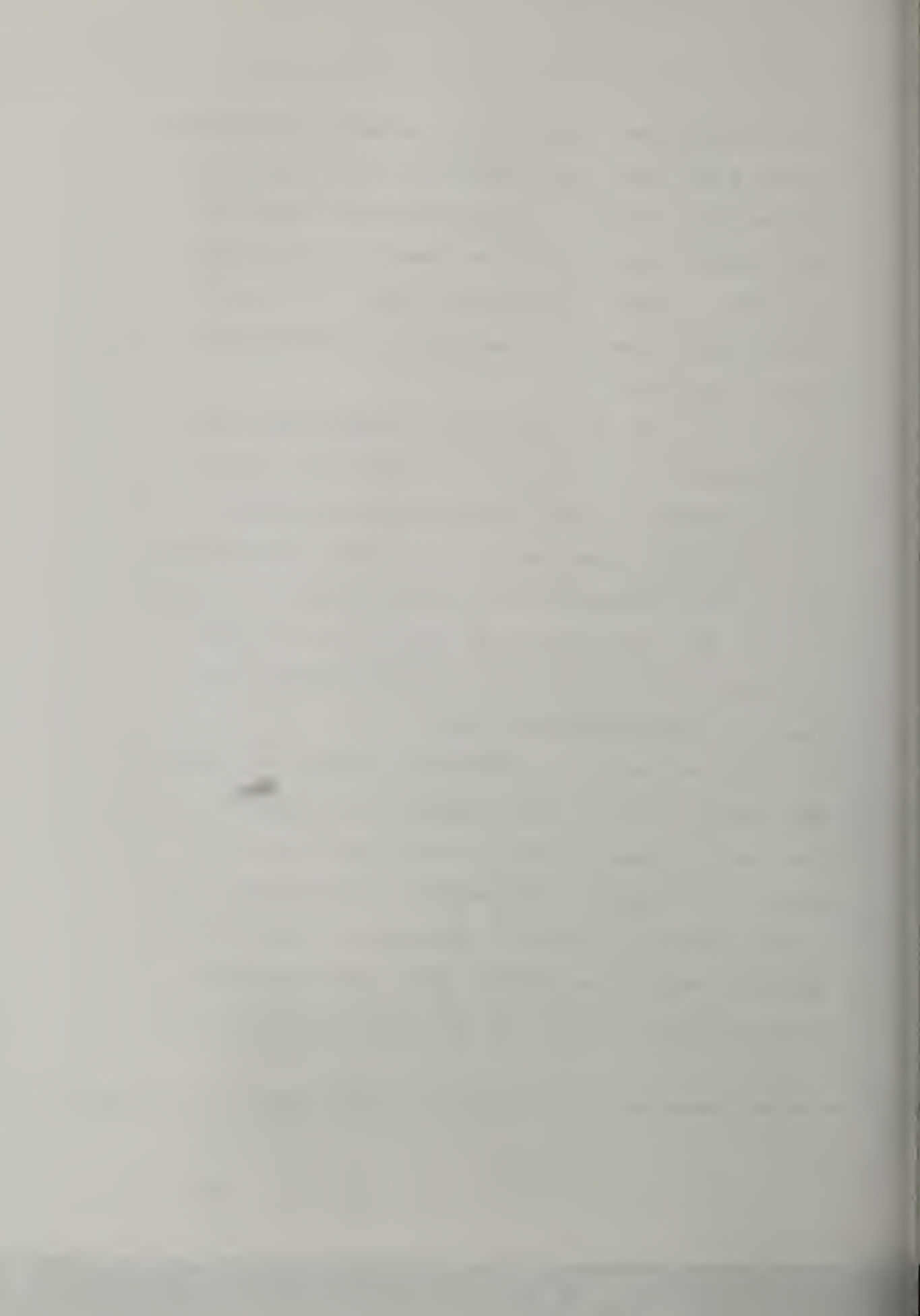
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with metaphysics. She confines herself to the survey of facts and those deductions which are exclusively determined by facts. A true philosophy upon which religion must rest, seeks the common and universal principle, capable of explaining both the laws of nature collectively and the origin and final cause of all existence.

It is seen that the world of experience, subjective and objective, may be studied from two different points of view, resulting in an emphasis on the one hand, of law, and on the other of causality. There is no incompatibility between these two points of view when it is known that it is the causal Intelligence that is operating in the universe, and that He works according to law.

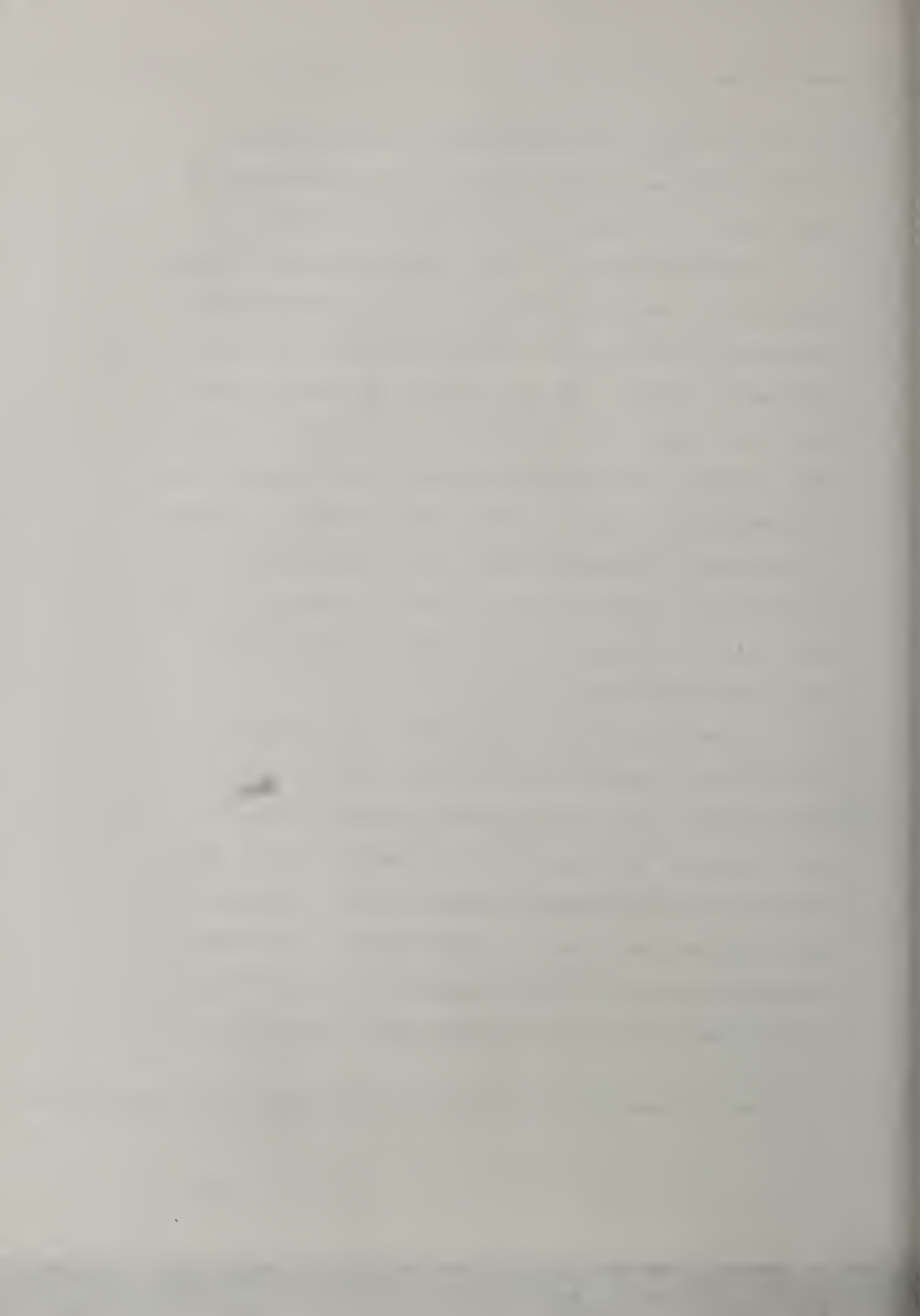
Nature and the Supernatural are not two different kinds of reality, but two different aspects of one and the same reality. Nature has to do with cause in the sense of antecedent and consequent, the supernatural with cause in the sense of final cause, and with meaning and value. Man himself partakes of the nature of both. He is limited in power, but



so far as they go his faculties are trustworthy, and the only way he can hope to attain knowledge of any kind is to trust the light that is in him.

One great result of all this conflict and investigation and critical reflection is the triumph of the scientific spirit in its application to all the phenomena of life, and the triumph of the religious spirit in that it ever persists, while both are mutually helpful in leading man nearer to a correct interpretation of God's eternal truth, whether revealed in the book of Nature or the book of Scripture, both of which are sacred to the scientific theologian and the religious scientist, and result in the highest good to all mankind.

After all, life is the great test of truth. If we should accept only that which can be proven by rigor and vigor, we would have neither Science nor Religion. Nothing can be proved strictly. Even science makes assumptions, some of which the test of life confirms and some it drives aglee. Belief may transcend reason and yet, finally, it may be found by the test of life to be compatible with reason.





The things that work well are the things on which we are to build. Workability is the test of truth in life and leads to a mighty conviction.

Science and Theology have come to look at all the phenomena of life as one grand whole; and according to the point of view will the emphasis be put upon the majesty of law, or the majesty of the great Final Cause. They have come through a wise division of labor or just partition of territory, to dwell together in friendship. The conflicts, between the scientific doctrine of evolution and theology, which in the last century were a standing order of the day have vanished. There is no incompatibility between the two when interpreted in the light of present day thought; and the relation is now one in which, in mutual respect, each contributes its quota toward the advancement and enrichment of life.



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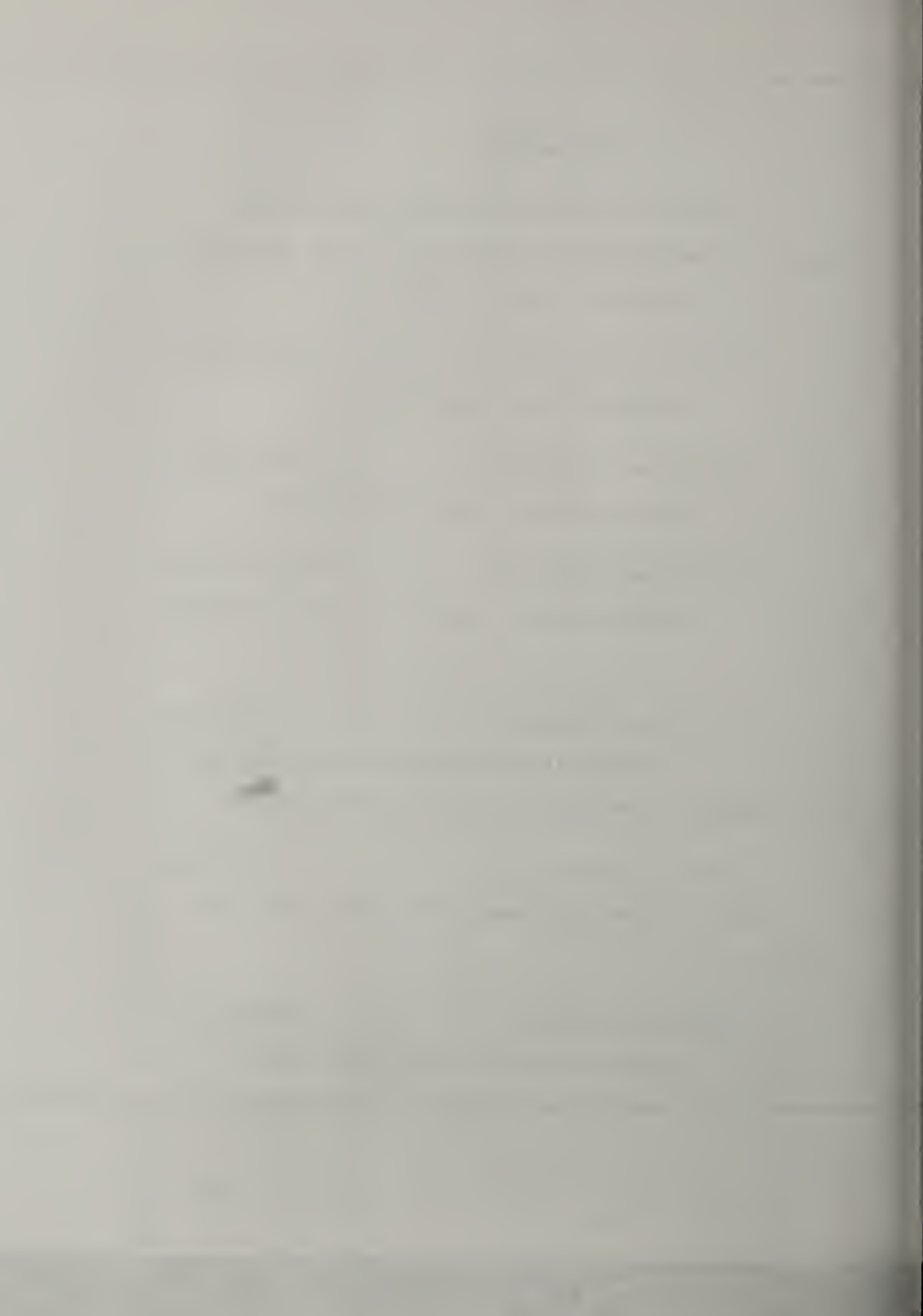
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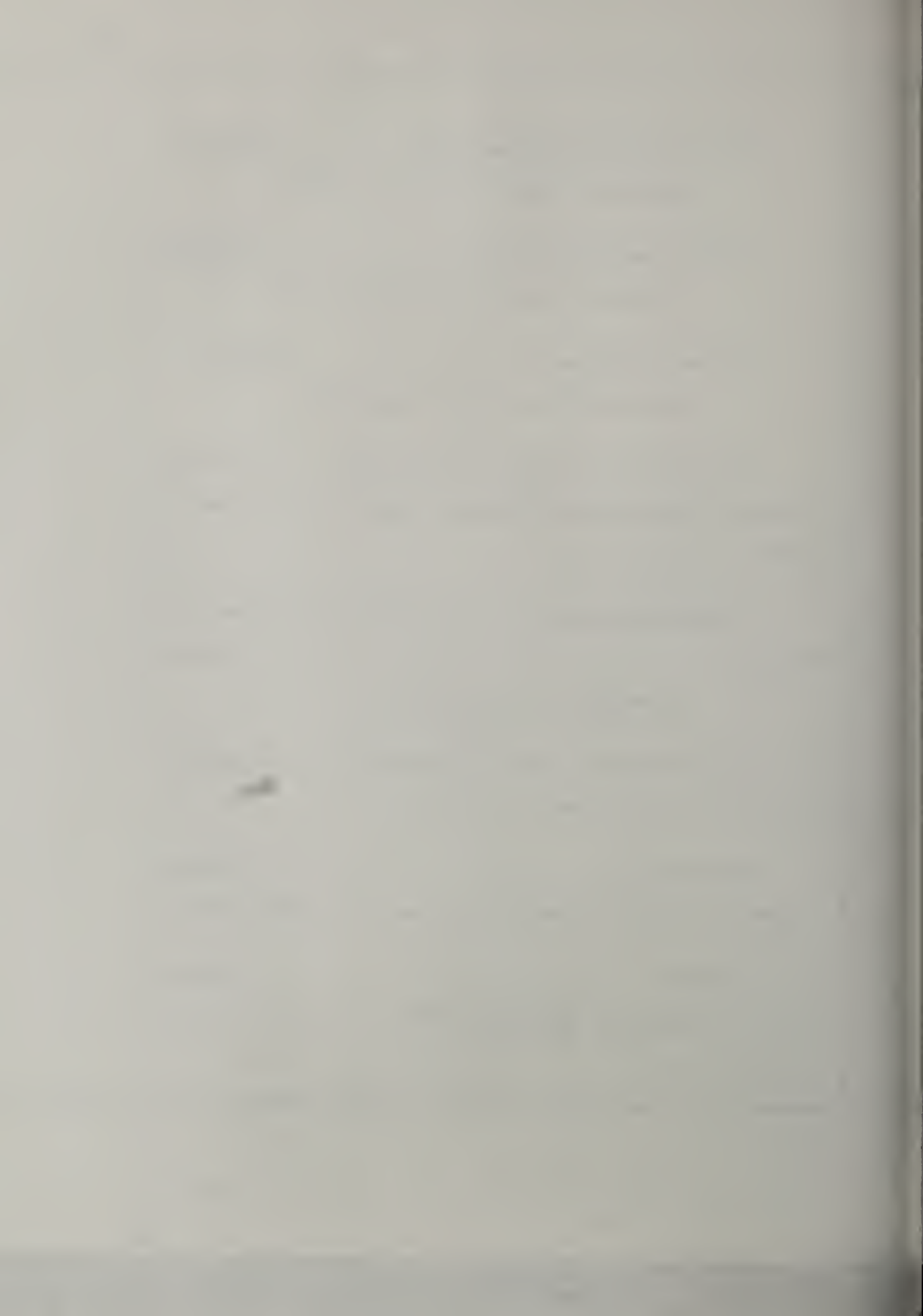
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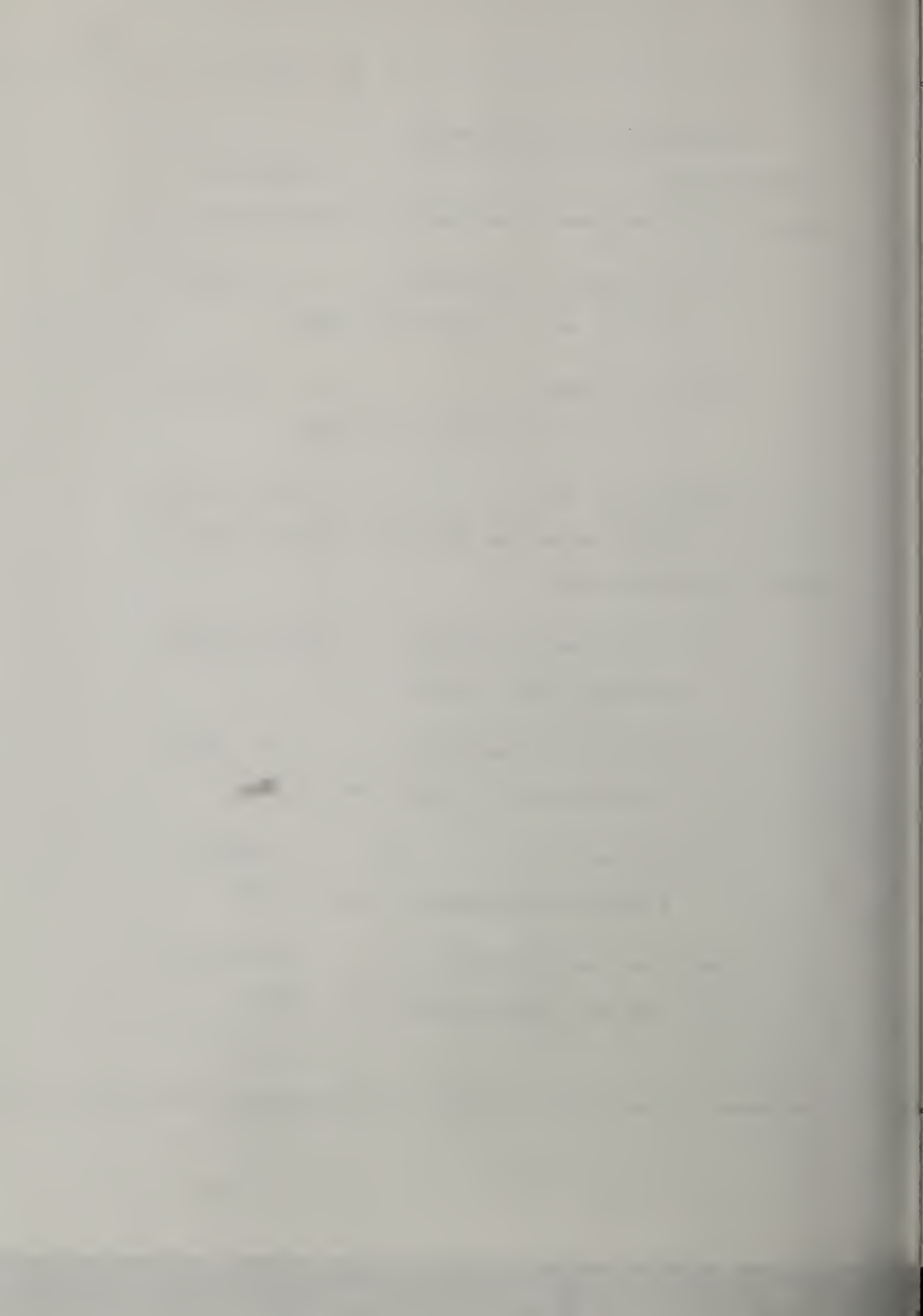
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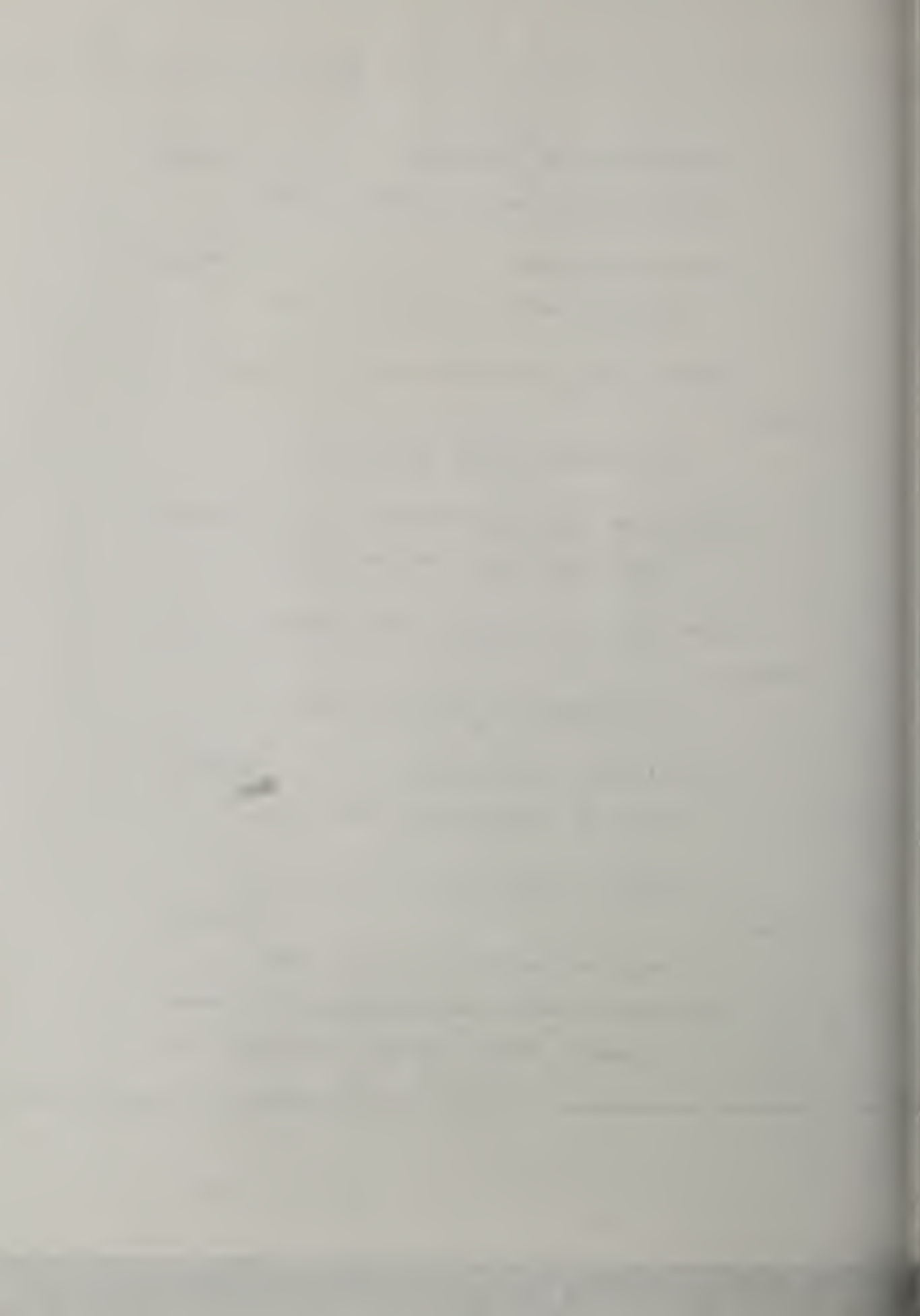
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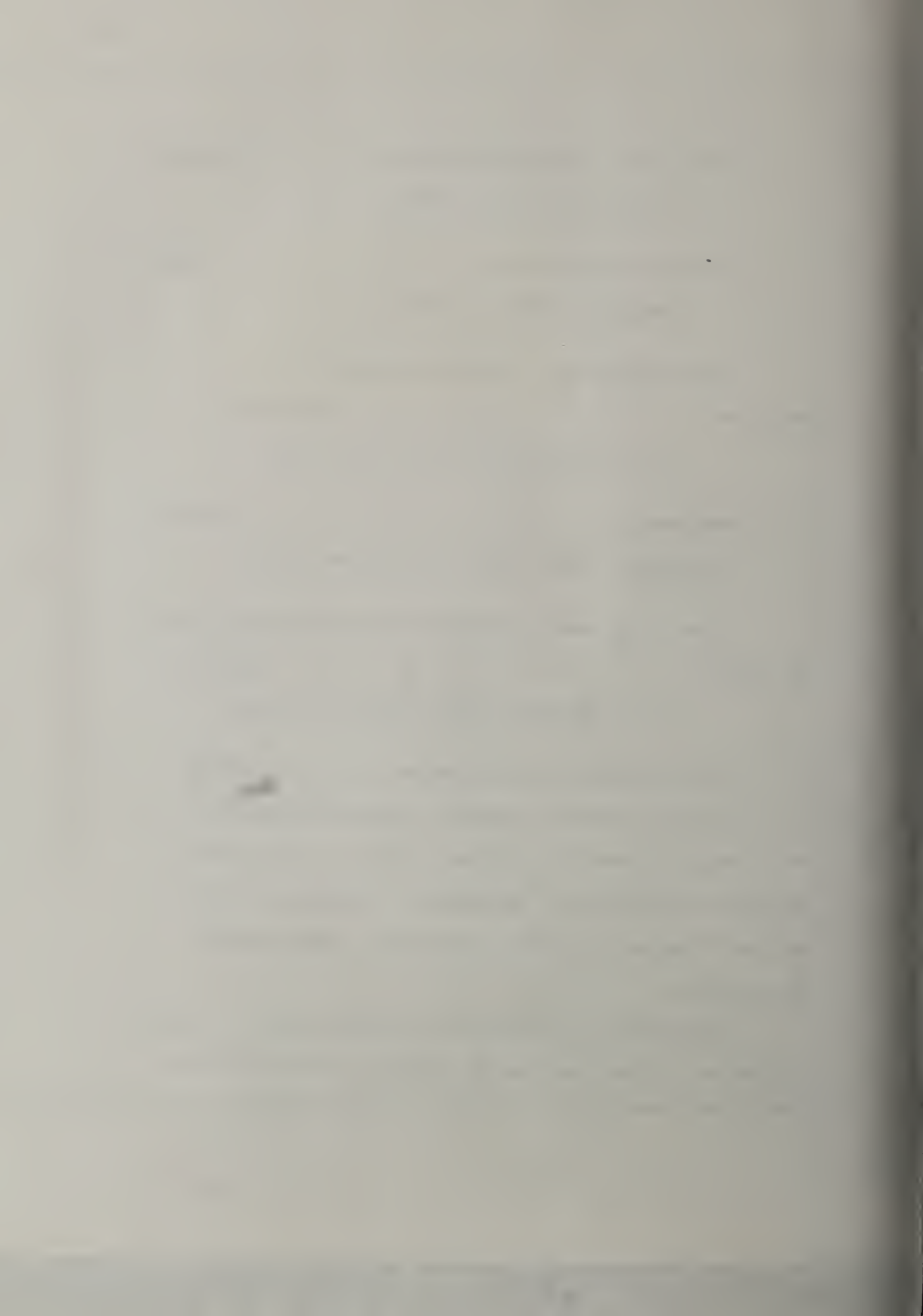
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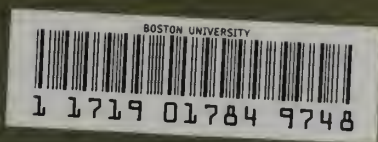
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